Public Utilities

Volume 60 No. 4 August 15, 1957

BUSINESS ADMINISTRATION LIBRARY BOSTON UNIVERSITY

THE RÔLE OF REGULATION IN A DEMOCRACY
By the Honorable Arthur L. Padrutt

« »

Variations of Capacity Costs in Utility Service
By Orrin S. Vogel

« »

Keeping Uncle's Nose Out of State Affairs
By T. N. Sandifer

« »

The Risks of a Regulated Industry *versus* Competitive Industries

POWERS *American*

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HYDRAULIC CRANE

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Public Utilities FORTNIGHTLY

VOLUME 60 AUGUST 15 NUMBER 4

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There are many differences in cost and price of natural gas as compared with electric utility operations.

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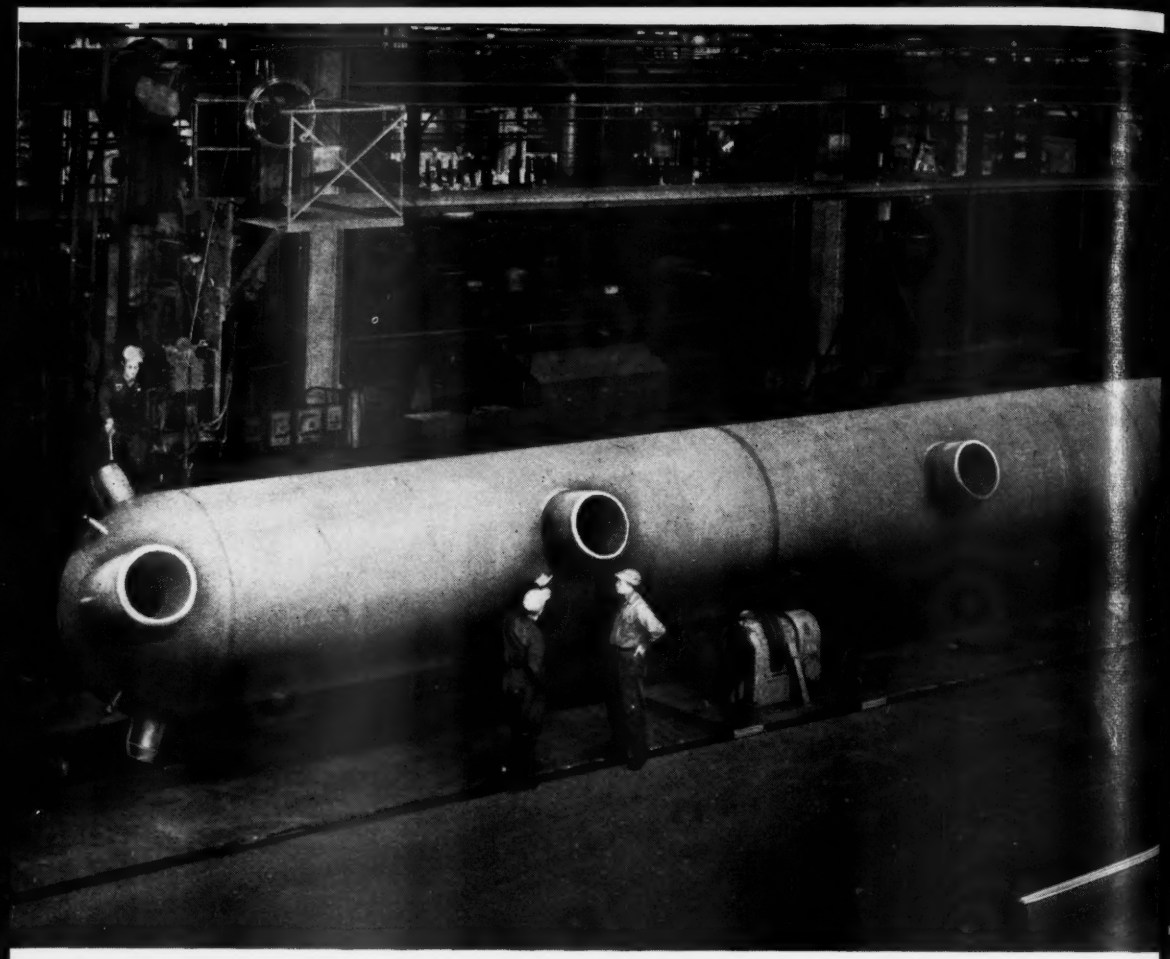


CONSTRUCTION IN HIGH

Two of the world's largest boilers for

Keeping ahead of the world's greatest city is no easy task—but for many years "largests" and "firsts" have had to be the rule with New York's source of light and energy.

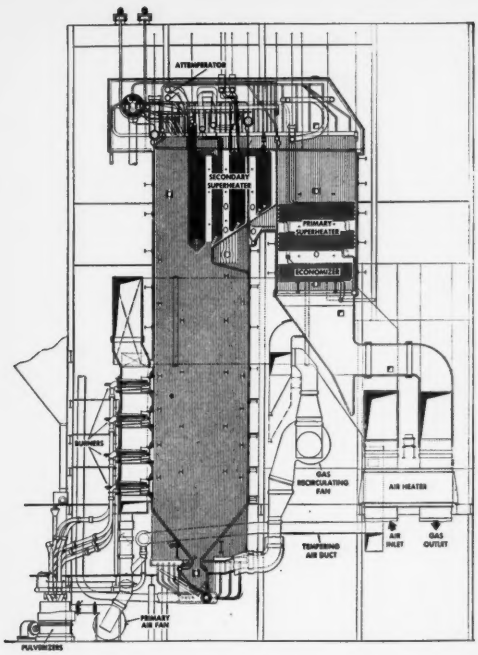
B&W furnished the first million pound per hour boiler for Con Edison's Hell Gate Station back in 1930. Many other engineering advances later accepted as standard in the industry have been pioneered on this system. For example, B&W furnished —for Con Edison's Astoria Station—the first pulverized-coal-fired pressurized boilers operating without induced draft fans.

And now, this latest step: two huge B&W Radiant Boilers being built for Con Edison . . . right in line with Con Edison's long-standing policy of progressive engineering.

Each B&W Radiant Boiler has a capacity of 2,400,000 lb of steam per hr and features pressure-firing, natural circulation, and separate furnaces with a single steam drum. The unit for Astoria is the third pressure-fired B&W Boiler to be designed for this new modern station of the Con Edison System.

In all but size and design details, Con Edison's new boilers are typical of many other B&W units now providing dependable, efficient steam generation in central station and industrial plant service.

The world's largest boiler drum . . . over 100 feet long, 66 inches inside diameter . . . is shown in a finishing bay at the B&W Barberton Plant awaiting shipment to Con Edison. It weighs over 200 tons.



One of the two identical B&W units for Con Edison's Astoria and Arthur Kill Stations. It is a horizontally pressure-fired, coal-burning Radiant Boiler designed for dry ash removal. Type EL Pulverizers are used to permit reliable, efficient, direct-firing of pulverized coal. The unit has a design pressure of 2500 psi, steam temperature of 1050 F and reheat to 1000 F. The secondary superheater is located at the exit of one furnace, and the reheater at the exit of the other furnace. The primary superheater is back of both the secondary superheater and the reheater. The giant drum, with Cyclone Steam Separators for natural circulation, provides nearly 100% separation of steam from water.

GEAR AT CON EDISON

Astoria and Arthur Kill Stations

B&W engineering advances in terms of improved steam generation efficiency—under your fuel and operation conditions...are available to you. Write, The Babcock & Wilcox Company, 161 East 42nd Street, New York 17, N. Y.

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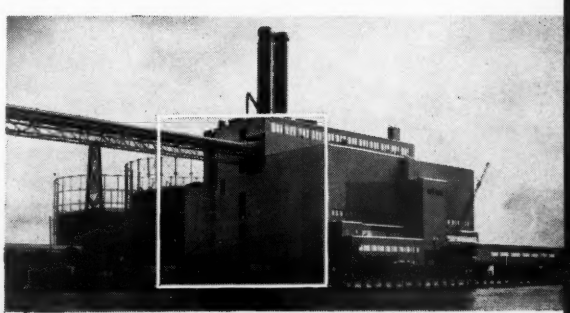


Area outlined in white shows construction area on third unit for Con Edison's Astoria Station.

Pages with the Editors

It has been said that the rise of the administrative boards has been the most significant legal trend of the century and that more values are affected today by their decisions than are those by all the courts acting on cases other than administrative appeals.

The opening article in this issue, by a member of the Wisconsin Public Service Commission, contains a thoughtful analysis of the genesis of the state public service commission as part of this trend towards administrative law. As in other states, Wisconsin first attempted to regulate utilities by direct legislation, then by a board with limited powers which were gradually expanded until in 1907 it became one of the first states (the other was New York in the same year) to establish a full-powered public service commission with jurisdiction over all major forms of public utility enterprise.

This feature is, in substance, a restatement in magazine article form of an address made at the annual convention of the Midwest Association of Railroad and Utility Commissioners in Kansas City, Missouri, last June 5th-7th.

Commissioner Arthur L. Padrutt,

T. N. SANDIFER

ARTHUR L. PADRUTT

the author of this article, was born in Huron, South Dakota. He received a Bachelor of Science Degree from the Eau Claire State College in 1939. Mr. Padrutt was graduated from the University of Wisconsin Law School in 1956. Prior to receiving his law degree, he taught in the Wisconsin public schools and owned and operated a photo supply business. He was elected to the Wisconsin assembly from Chippewa county in 1940 and served four consecutive terms in that body. He was elected to the Wisconsin senate in 1948, and he served in the 1949, 1953, and 1955 sessions.

He was a member of the joint finance committee in 1951 and 1953 legislatures, and in 1955 he was chairman of the governmental and veterans' affairs committee. From 1953 to his resignation in 1956 he was chairman of the joint survey committee on retirement systems. Following his appointment to the public service commission, Mr. Padrutt continued to act as chairman of the governor's retirement systems study committee. He was appointed to the public service commission on April 13, 1956, by Governor Kohler for the unexpired term of former Chairman James R. Durfee, who left the com-

section of Kellogg's electronic computer.

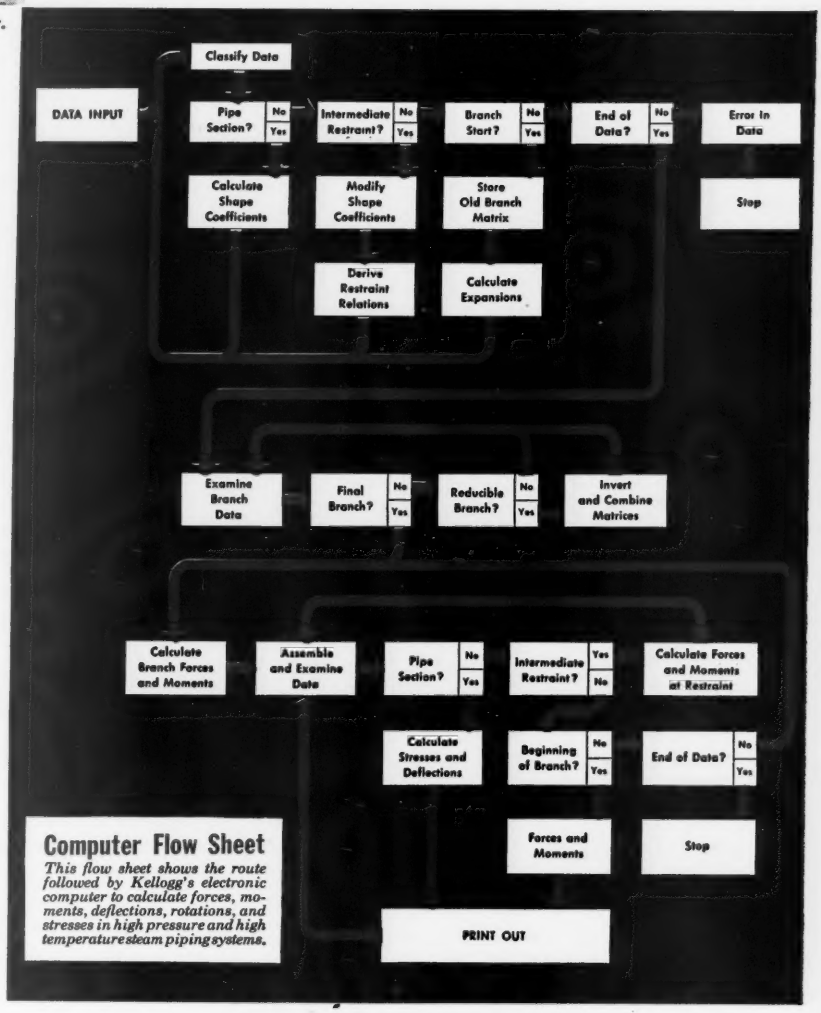
Electronic Route to Lower Steam Power Piping Costs

ellogg's Digital Computer ermits More and Faster curate Flexibility Analysis of Complex Main d Reheat Piping Systems

PING PACE with the increasingly al pressures and temperatures e modern steam-electric power are M. W. Kellogg's advanced niques for pre-determining ses and reactions of main and t piping. Most recent addition rge magnetic drum digital com-, used to calculate forces, mo-ts, deflections, rotations, and ses in complex piping systems. enabling Kellogg engineers to rtake a far greater number of lations in less time than ever re, electronic computation makes ible the ultimate or near ulti-e piping system designs. Pipe can often be shortened without ificing required margins of safety; al investment and maintenance reduced; operating efficiency eased.

pioneer in flexibility analysis niques, which include manual ulations, model testing, and a ller electronic computer, Kellogg inues its pioneering in the power ng industry by the addition of high speed computer to its New k engineering facilities.

cordial invitation to see the W. Kellogg electronic computer work is extended to consulting neers and to engineers of power erating companies and their pment manufacturers. Appoint-ts may be made through the s Manager, Fabricated Products ision.



Computer Flow Sheet

This flow sheet shows the route followed by Kellogg's electronic computer to calculate forces, moments, deflections, rotations, and stresses in high pressure and high temperature steam piping systems.

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POWER PIPING—THE VITAL LINK

mission to serve as chairman of the Civil Aeronautics Board.

* * * *

THERE are many differences in cost and price of natural gas as compared with electric utility operations. ORRIN S. VOGEL, director of economic research, Florida Power Corporation, St. Petersburg, Florida, in his article beginning on page 226, gives us an analysis on how capacity costs vary in relation to the different types of utility service. MR. VOGEL's study shows how the problem of "costing" as distinguished from "pricing" the relative factors of demand (capacity) and output cannot be treated in rate making for an electric utility along exactly the same lines as treatment for natural gas rate making. Such additional factors as storage availability and interruptible supply for gas customers make the allocation of capacity costs more flexible than in the case of an electric utility obligated to serve all customers without the advantage of storage facilities.

MR. VOGEL is a graduate of Rensselaer Polytechnic Institute (EE), who also took postgraduate work at Georgia Tech in accounting, business administration, economics, and banking. His first professional employment was as a valuation engineer for the city of New York, after which he was employed as a consultant by the Georgia Power Company, and in 1937 by the Georgia Public Service Commission. Since 1947 he has been with the Florida Power Corporation, of which he is now director of economic research. MR. VOGEL has had broad experience both as former chief engineer of the Georgia commission and during his service with the Florida Power Corporation in the preparation and presentation of rate cases before state, federal, and local regulatory agencies.

* * * *

SEVERAL weeks ago Regnery Company of Chicago announced the publication of *The Sovereign States*, by James Jackson Kilpatrick, editor of *The Richmond News Leader*, who has also contributed occasionally to this magazine. This book traces the doctrine of states' rights to earlier Virginians—Patrick Henry and Thomas Jefferson, among others—as well as a noted Carolinian, John C. Calhoun. Not generally known is Patrick Henry's prophecy that the avenue of federal invasion of the states would be through the federal power to tax.

ORRIN S. VOGEL

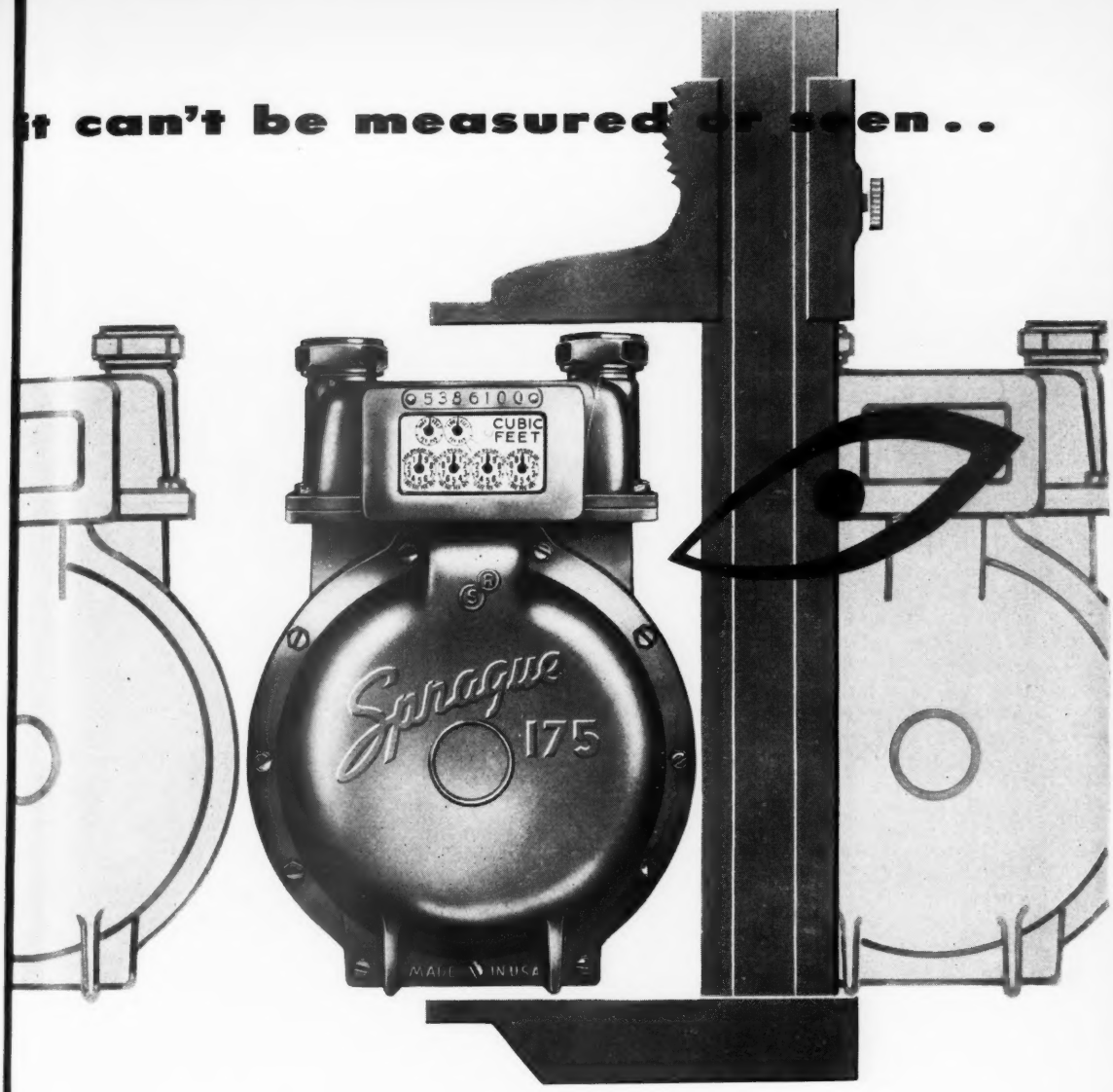
IN this issue, beginning on page 240, T. N. SANDIFER, well-known correspondent and author of business articles, has written an interesting account of the way Uncle Sam uses the federal government as a funnel for channeling all blessings of government benefits to the states, along with an ever-increasing amount of dictation, tax, and policy control. It goes without saying that the states cannot get federal money without taking the advice and controls that go along with it. The recent controversy over highway billboard regulation is a case in point.

THE outdoor sign industry has been a market for many years for power and light. The sign that advertises in daylight is earning only half its keep. On the other hand, many urban installations, familiar in any city, attract little attention in the daytime but go to work at night under lights. Who should control this — Uncle Sam or the states? MR. SANDIFER has some ideas about it.

THE next number of this magazine will be out August 29th.

The Editors

t can't be measured or seen . .



but it can be proved . . .

that sustained accuracy in Sprague Gas Meters over extended periods of service with a minimum of maintenance is the rule. Such proven performance can be consistently achieved only when quality materials and fine workmanship are combined with simplified design to produce a product outstanding in its field.

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Gas Meters of Simplified Design and Sustained Accuracy

Coming IN THE NEXT ISSUE

(August 29, 1957, issue)

★

THE YEARS BRING CHANGES TO A UTILITY SERVICE AREA

This article, by Bayard L. England, president of the Atlantic City Electric Company, covers the financing problems of a company after being separated from former holding company affiliation. It contains suggestions which will be helpful to other companies facing financial questions. It deals with the situation in which a newly separated operating utility company finds itself when it is thrown on its own resources of management, financing, and operation. Financing a program of expansion was found to be the most important and difficult problem because it had been the one which former holding company management had taken care of almost entirely and exclusively. The successful record of the Atlantic City Company shows how well the "amateur talent" developed into competent and professional performance.

SHOULD A UTILITY MERCHANDISE APPLIANCES? PART I.

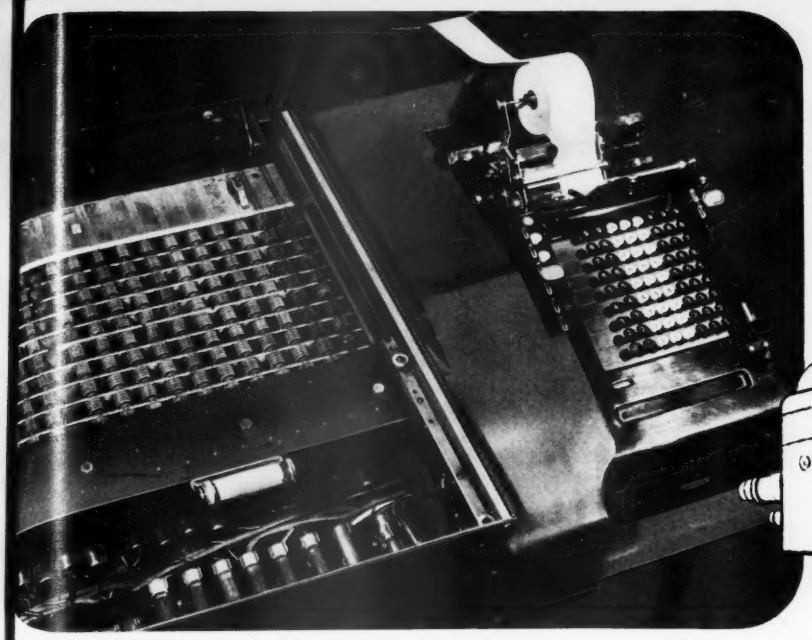
This two-part series by C. E. Wright, professional writer of Jacksonville, Florida, and former industrial magazine editor, is essentially a survey of respective merchandising practices in relation to present-day public utility operations. Over two decades ago there was considerable opposition to, and difference of opinion about, a utility company selling appliances directly. As a result, a number of companies got out of the merchandising business and decided instead to co-operate with local appliance dealers. What is the situation today? Without taking sides this article samples present-day practices. The first part deals with the question of policy—to merchandise or not to merchandise. The second part will deal with the more recent complication of discount houses and other competition.

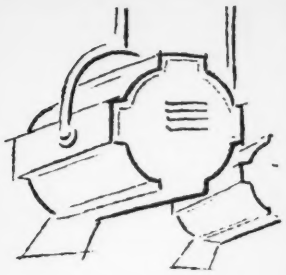
A SATISFIED CUSTOMER REPORTS ON HIS HEAT PUMP

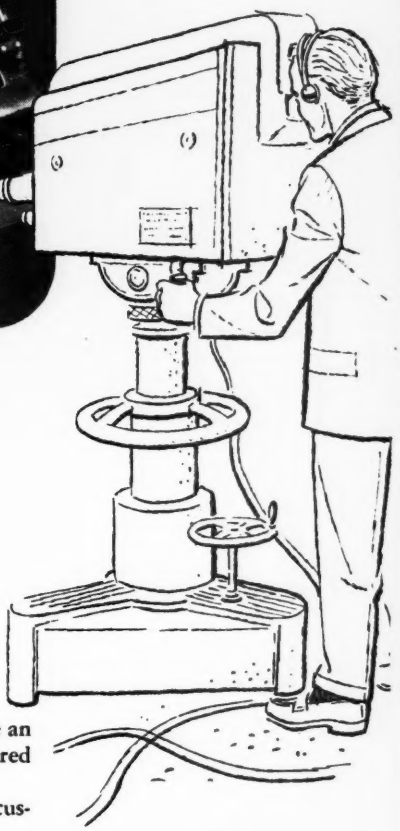
Harold H. Young, a partner of Eastman, Dillon, Union Securities & Company, is a well-known figure in public utility finance. But this article is written by Mr. Young in his capacity as a satisfied customer of an interesting household appliance which the electric utilities are striving to develop along more extensive lines. It is the heat pump. Two years ago the author had one installed in his New Jersey home. It happened to be the first one on the lines of his electric utility company and both the utility and its customer naturally followed the result with great interest. The article tells us about the performance and the customer's favorable reaction.

★

Also . . . ***Special financial news, digests, and interpretations of court and commission decisions, general news happenings, reviews, Washington gossip, and other features of interest to public utility regulators, companies, executives, financial experts, employees, investors, and others.***







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. . . are your rates reflecting proper return on current operating conditions?

The "Bill Frequency Analyzer"* can produce rate analyses that give an accurate, up-to-date answer. And, it's a question that should be answered MONTHLY to keep rate revenues *profitable.*

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The cost of the service? Less than doing it yourself, and more important, you get the figures so quickly, revenue impairment can be spotted immediately and steps taken to correct inequities. Rate Commissions are familiar with, and respect our analyses for their clarity and accuracy.

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—MONTAIGNE

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"Some people profess to believe that large and small business are antagonists in a battle for survival. Nothing could be further from the truth. In fact, they are partners. Each is dependent on the other, and together they form a team."

F. D. TELLWRIGHT
Vice president, Pacific Telephone & Telegraph Company.

"Without sound public relations planning, you're likely to be living from crisis to crisis. It's a poor way to live. It's far better to plan ahead and work to prevent public relations 'fires' than to be always on the jump trying to extinguish them."

EDITORIAL STATEMENT
Allendale (South Carolina) Citizen.

"The federal government feeds on itself. The more power it gets the more it goes after. At times government agencies are guilty of using the people's money to buy control of them in areas where the people can well do without federal control."

JOHN C. WHITAKER
Chairman of the board, R. J. Reynolds Tobacco Company.

"The only sound reason for moving an industry in the United States—to California, Texas, Mississippi, North Carolina, or anywhere—is that, by finding a favorable combination of resources and skill, it is better able to serve the consuming public of the United States."

CRAWFORD H. GREENEWALT
President, E. I. du Pont de Nemours & Company.

"The time has come, it seems to me, when our people wish to insure that domestic tranquility which our Constitution sought for us in the beginning of the Republic. Disturbers of the peace, political or economic, must be prepared to face the consequence of offense to the common will."

DONALD R. RICHBERG
Lawyer.

"Those who espouse compulsory unionism are essentially adopting the communist theory that there should be only one party to which everyone should give allegiance and support. Inside the party there may be disagreements, but no one is permitted to go outside and support an opposition movement."

BENJAMIN F. FAIRLESS
Former chairman of the board, United States Steel Corporation.

"We realize there can be no progress without change. But we have also learned from experience that there can often be change without progress—disastrous, crippling change, for the sake of change alone. The real 'progressive' is the man who knows unfailingly which kind of a change is which. He will never permit our freedoms to be swept aside in the search for a short cut to Utopia; nor does he regard the Constitution as a dam which holds back the tide of our national progress. Rather, he sees in it the stout retaining walls which channel the flow of that tide always in the direction of human liberty."

Pacific Northwest utilities work together to achieve utmost use of water storage facilities. Puget Sound Power & Light uses private line telephone to communicate between its Kirkland dispatcher and Northwest Power Pool headquarters.

Puget's dispatcher arranges power transfers by fast, reliable private line telephone

When Puget Sound Power & Light's dispatcher has wer to spare—or when he wants to borrow some m his neighbors, he uses a private line telephone make the arrangements.

Bell System private lines connect his operations nter at Kirkland, Wash., with Northwest Power Pool adquarters at Spokane. Many Washington and other rthwest utilities are members of the pool.

Puget's dispatchers call hourly to report their demand, output and excess energy. This co-operation insures that all the region's power is utilized to make more low-cost energy available to people.

Efficient operation, smooth co-operation — both require dependable communications to keep costs down. Call your Bell Telephone Company business office, and our representative will be glad to help you study your requirements at no cost to you.

BELL TELEPHONE SYSTEM

PRIVATE LINE TELEPHONE • PRIVATE LINE TELETYPEWRITER • DATA TRANSMISSION SYSTEMS
CHANNELS FOR: REMOTE METERING AND CONTROL • TELEPHOTOGRAPH • CLOSED CIRCUIT TV

An answer for every electric utility

A PLANNED OUTAGE IS NO OUTAGE

Five hundred kw is not a large unit of power by utility standards. Not, that is, unless it is badly needed . . . and not available.

That's why more and more utilities are finding an increasing number of uses for the Electro-Mobile 500 kw highway-trailer generating unit. It can go anywhere, pick up a load in minutes, permit construction or maintenance crews to work without interrupting service to customers.

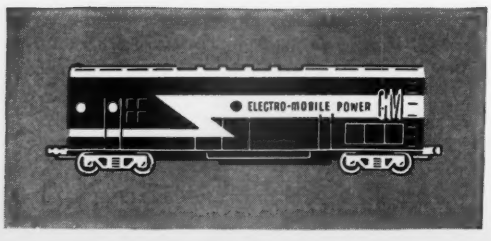
In addition, Electro-Mobile Power offers an immediate source of emergency power to areas that might otherwise be without service for a long period of time. Used in multiple, there is no limit to the amount of power these units can supply.

The savings from Electro-Mobile Power are many. Rebuilding or maintenance work of any duration can be handled during regular working hours. Work goes faster, in greater safety, and most important—customer relations and income are maintained during the temporary outage.

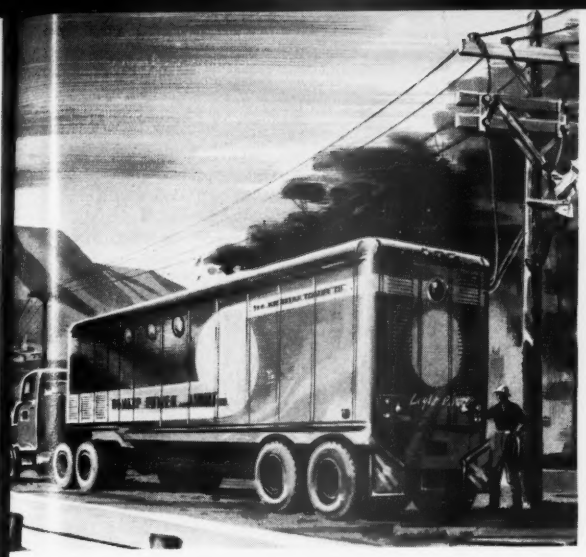
A planned outage is no outage with Electro-Mobile Power. Its many advantages are helping to reduce costs and improve service for many utilities. It can do the same for your system. Your Electro-Motive representative will be glad to show you how.

Here's how one Midwestern utility company uses its Electro-Mobile trailer . . .

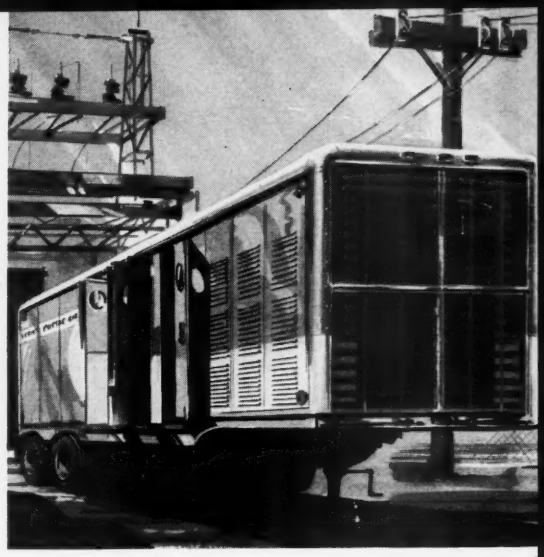
In a span of twelve months, this utility used its Electro-Mobile trailer on fifteen different jobs. Shown here are some examples of the work completed and in progress with this unit. During the year the mobile trailer was operated over 340 hours. On one job alone, it was used 145 hours, delivering 58,500 KWH.



Rail Car—develops 1,000 kw. For use on rail sidings or placed on piers for semi-permanent installation.



Relocating 12,400-volt line for new highway.
Hours used: 68 ¼ KWH generated: 22,700



Installation of new transformer for substation.
Hours used: 3 ½ KWH generated: 1,100

Feeding 12,400-volt sub-transmission line while stringing new conductors on transmission line.
Hours used: 145 KWH generated: 58,500

Handling daily peaks while existing transmission line and substation are being rebuilt.
Hours used: daily average 4

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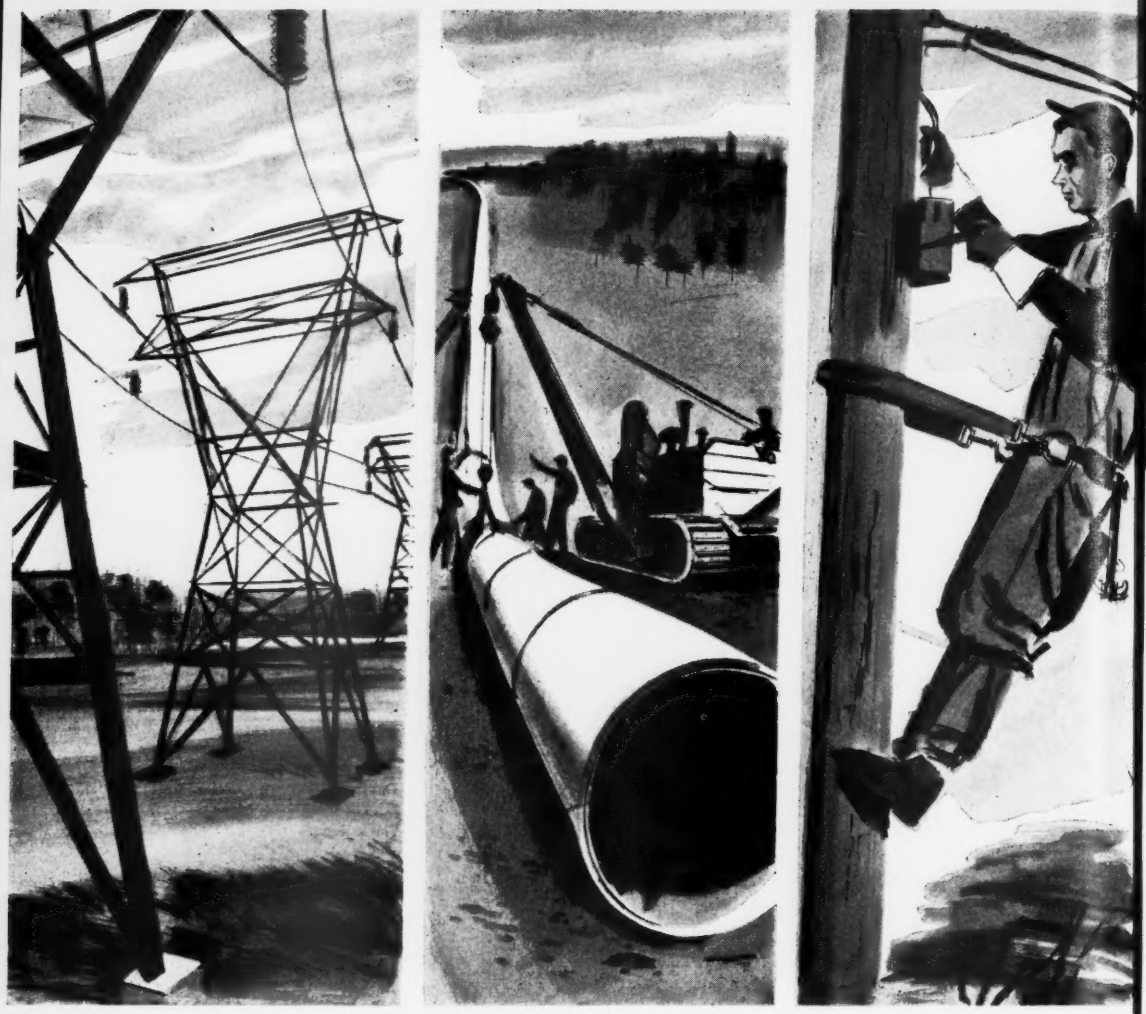

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service lines into the future...

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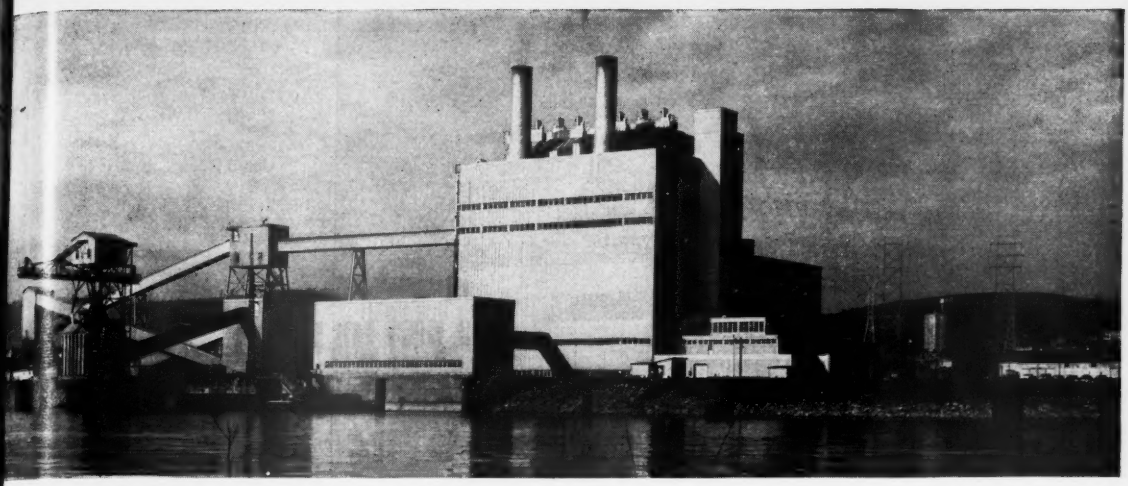

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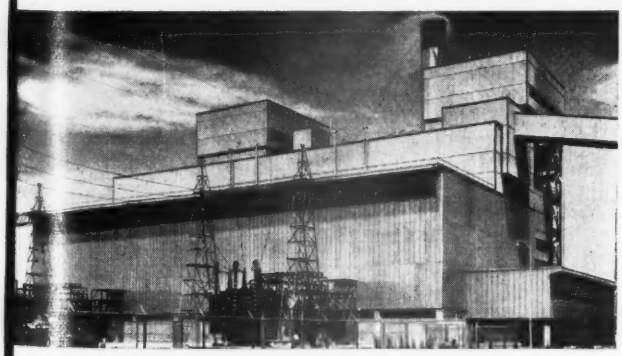
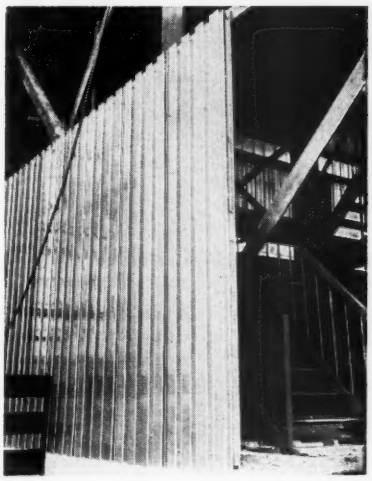


Q-Panel walls grace the new Elrama Power Plant (above) near Pittsburgh. It was designed by Duquesne Light Company's Engineering and Construction Department. The Dravo Corporation was General Contractor.



Q-Panel walls (above) go up quickly in any weather because they are dry and hung in place, not piled up.

More than 32,000 sq. ft. of Q-Panels were used to enclose the impressive Hawthorn Steam Electric Station (left) of the Kansas City, Missouri, Power and Light Company. Ebasco Services, Inc., designed and built the plant.

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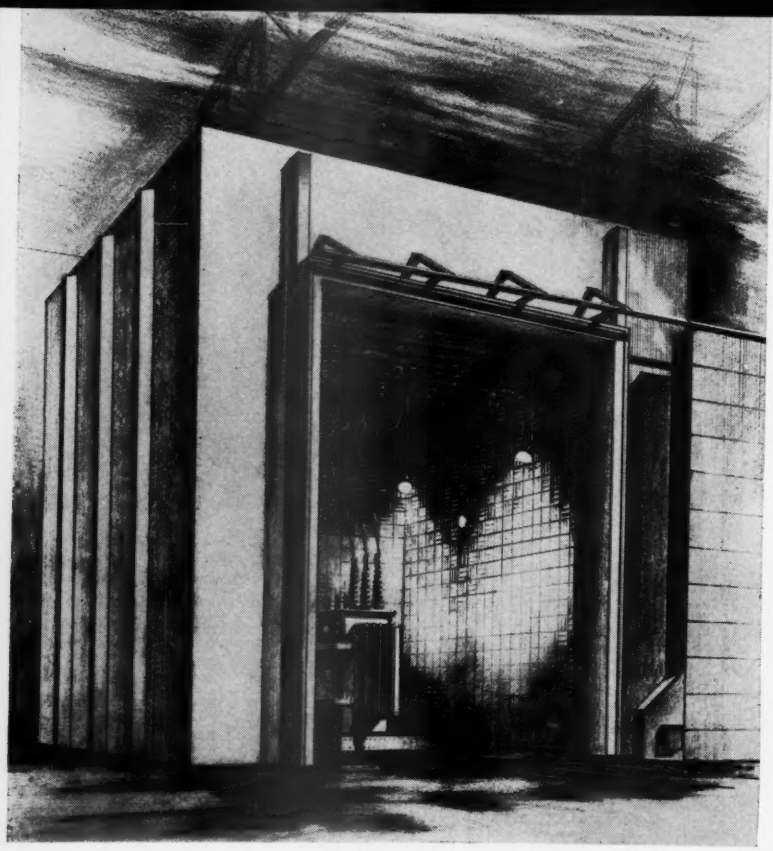

VERY "HUSH HUSH

The new Westinghouse Anechoic Vault recently dedicate at its Sharon, Pennsylvania transformer laboratory is equivale in size to a five-story building, with walls five feet thick and 150-ton door.

As Westinghouse stated—"Here the biggest transforme to be built in the foreseeable future will be tested for noise r duction."

Engineers at Commonwealth Associates Inc. were r sponsible for the structural and acoustical engineerin design for this Westinghouse project.

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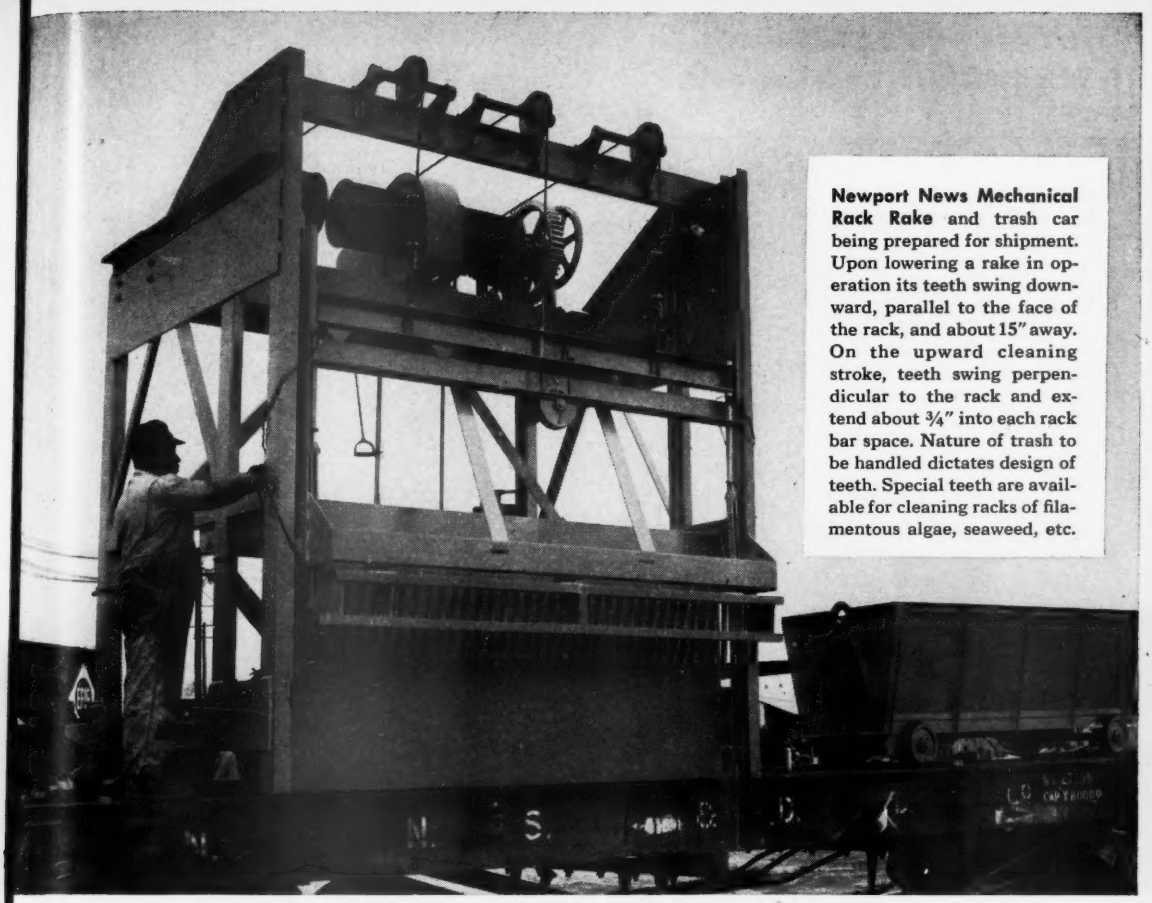

Newport News Mechanical Rack Rake and trash car being prepared for shipment. Upon lowering a rake in operation its teeth swing downward, parallel to the face of the rack, and about 15" away. On the upward cleaning stroke, teeth swing perpendicular to the rack and extend about ¾" into each rack bar space. Nature of trash to be handled dictates design of teeth. Special teeth are available for cleaning racks of filamentous algae, seaweed, etc.

Positive cleaning action calls for guided rack rakes

Excessive loads of trash cannot push a Newport News rake away from the racks.

And there's no chance of the rake *riding over trash* on the upward cleaning stroke. Nor will its teeth drop the debris. Because Newport News builds the rake to operate in channel guides... for *positive cleaning action.*

That's why efficient rack cleaning assures the maximum head at intakes and is yours when you put a rugged and dependable Newport News Mechanical Rack Rake on the job.

Maximum width of a single rake is determined by design of the forebay. Where a single bay is extremely wide, intermediate guides are sometimes installed to reduce width of the rake. Such installation is relatively inexpensive.

A power-operated Newport News Mechanical Rack Rake, under ordinary conditions, enables one man per shift to keep racks clean for a dozen bays, from 5′-6″ to 28′-6″ in width.

Trash is cleaned from the rake manually, or by a mechanical "sweep", into a flume, a car or onto a trash apron. Local conditions and nature of the trash dictate method of disposal. The many typical installation arrangements fit most needs, but each installation is a custom built job.

We invite inquiries from water users who are troubled with trash. Write for your copy of "RACK RAKE", an illustrated booklet describing the operation and advantages of the Newport News Mechanical Rack Rake.

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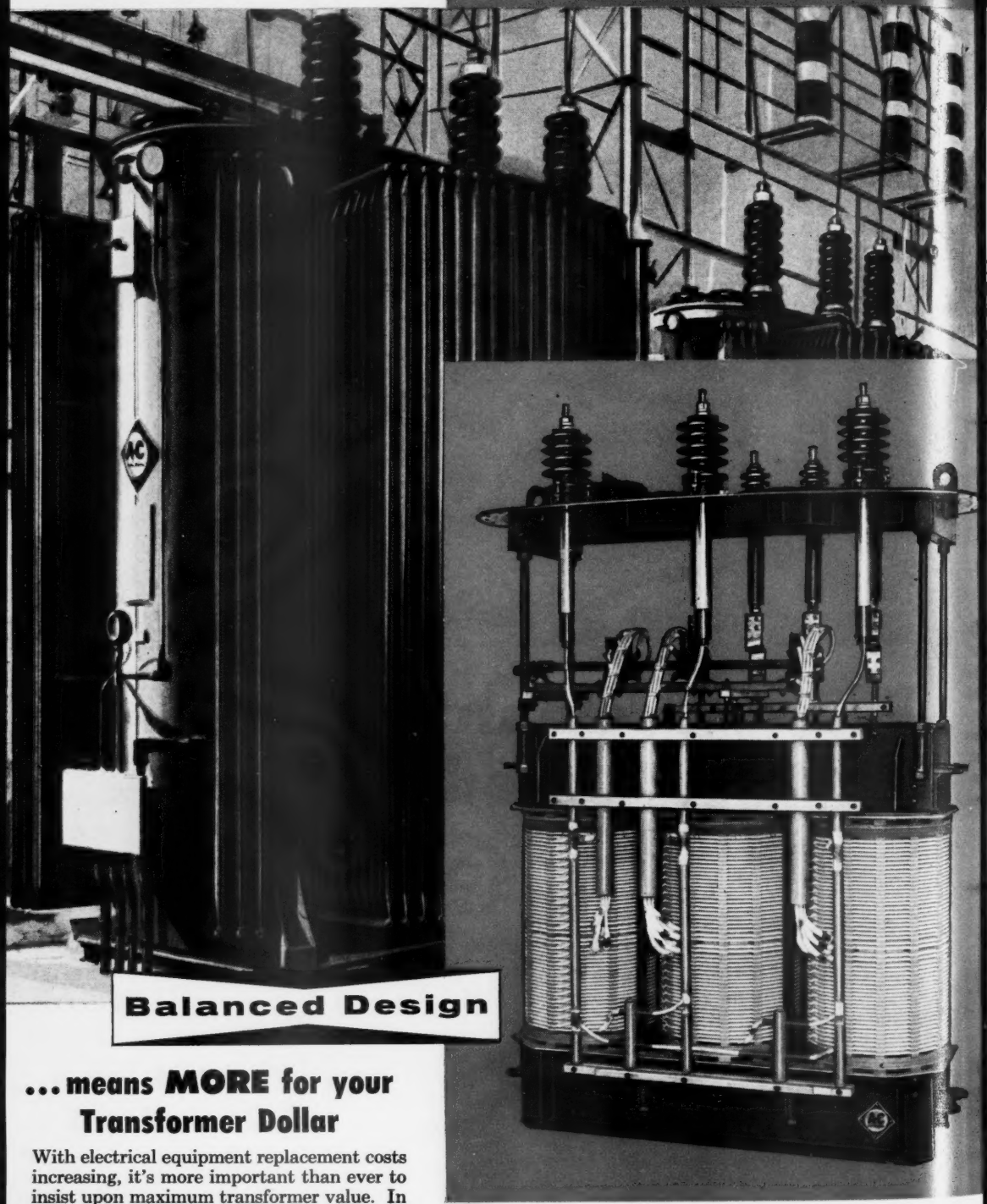

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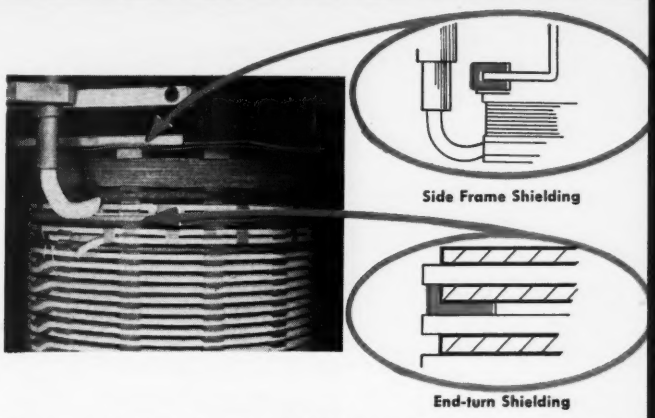
Here's Why

1

Corona-Free Design
gives insulation long life

Creeping paralysis caused by corona can't take the life of this transformer. Advanced insulation practices, dimensional properties, proper coordination between solid and liquid insulation materials prevent concentration of dielectric fields and keep corona from forming.

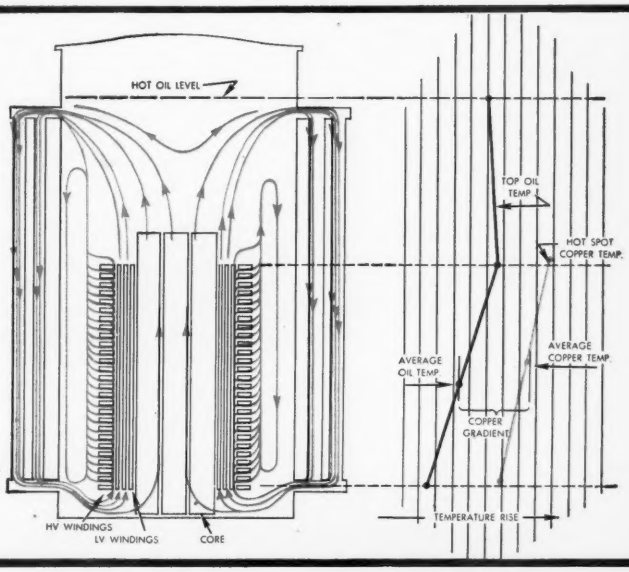


Shown are just two of many shielded areas that protect windings from the overstresses of lightning and switching surges.

2

Low Gradients
thorough cooling lengthens service

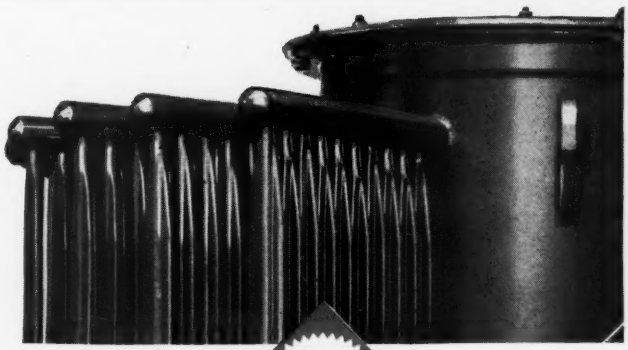
Temperature gradients are lower—hot spots are minimized in Allis-Chalmers transformers. Assembly is built for rapid cooling. Coils permit cooling oil to flow through and around all layers. Special core spacers on larger units allow oil to flow through core structure. Insulation coordination and uniform cooling increase insulation life and multiply the value received for each transformer dollar spent.



3

New Radiator Design
cuts maintenance

Fewer parts—simplified shape facilitates inspection . . . there are no nooks and corners where dirt and corrosion get in their destructive licks. Painting costs are reduced. More uniform cooling (with less floor space requirements) extends transformer life.



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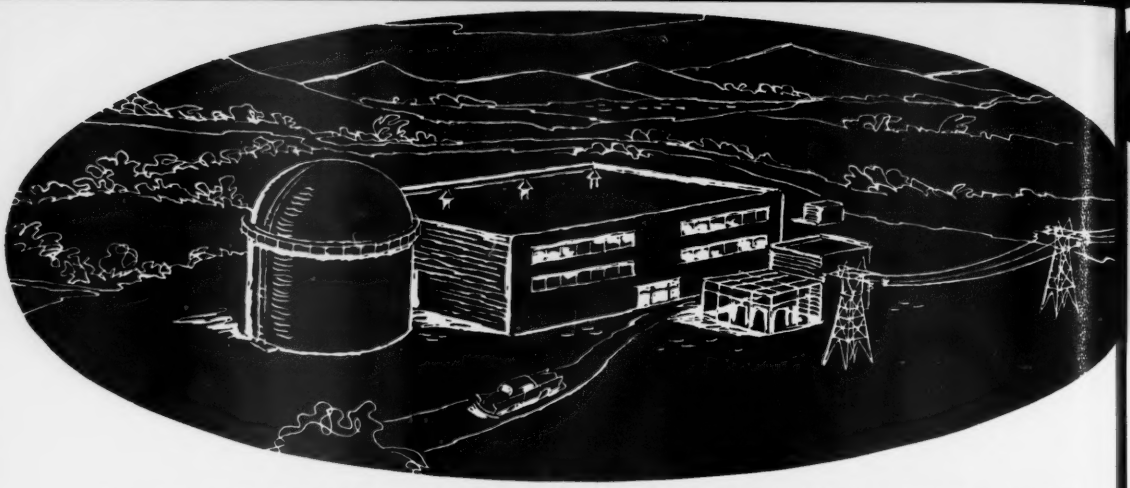

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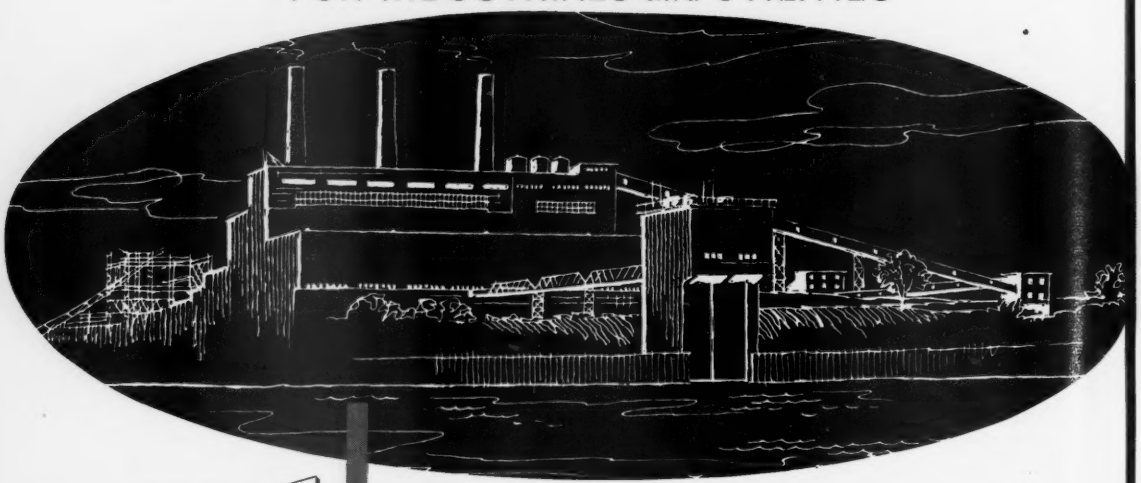

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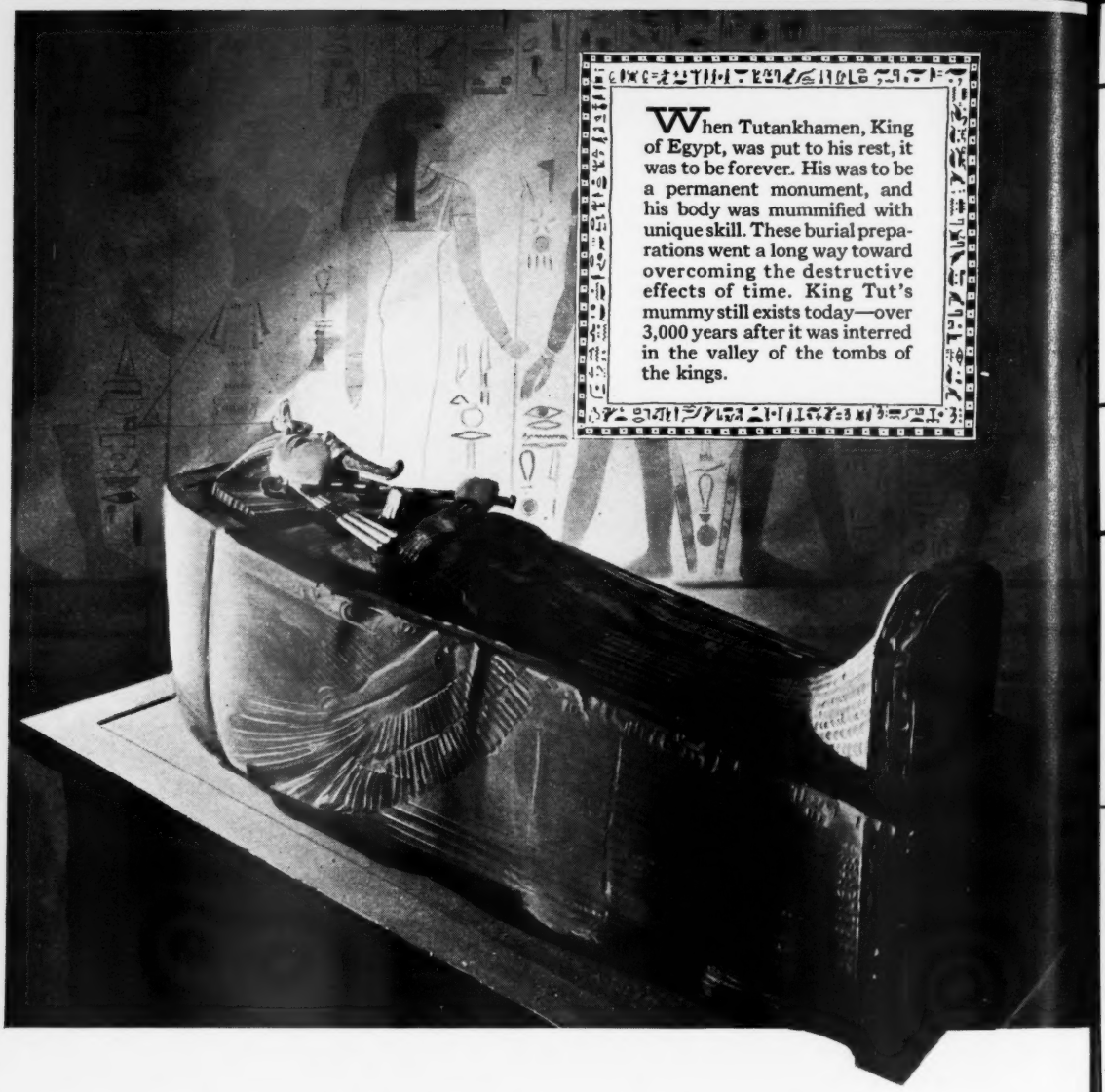

When Tutankhamen, King of Egypt, was put to his rest, it was to be forever. His was to be a permanent monument, and his body was mummified with unique skill. These burial preparations went a long way toward overcoming the destructive effects of time. King Tut's mummy still exists today—over 3,000 years after it was interred in the valley of the tombs of the kings.

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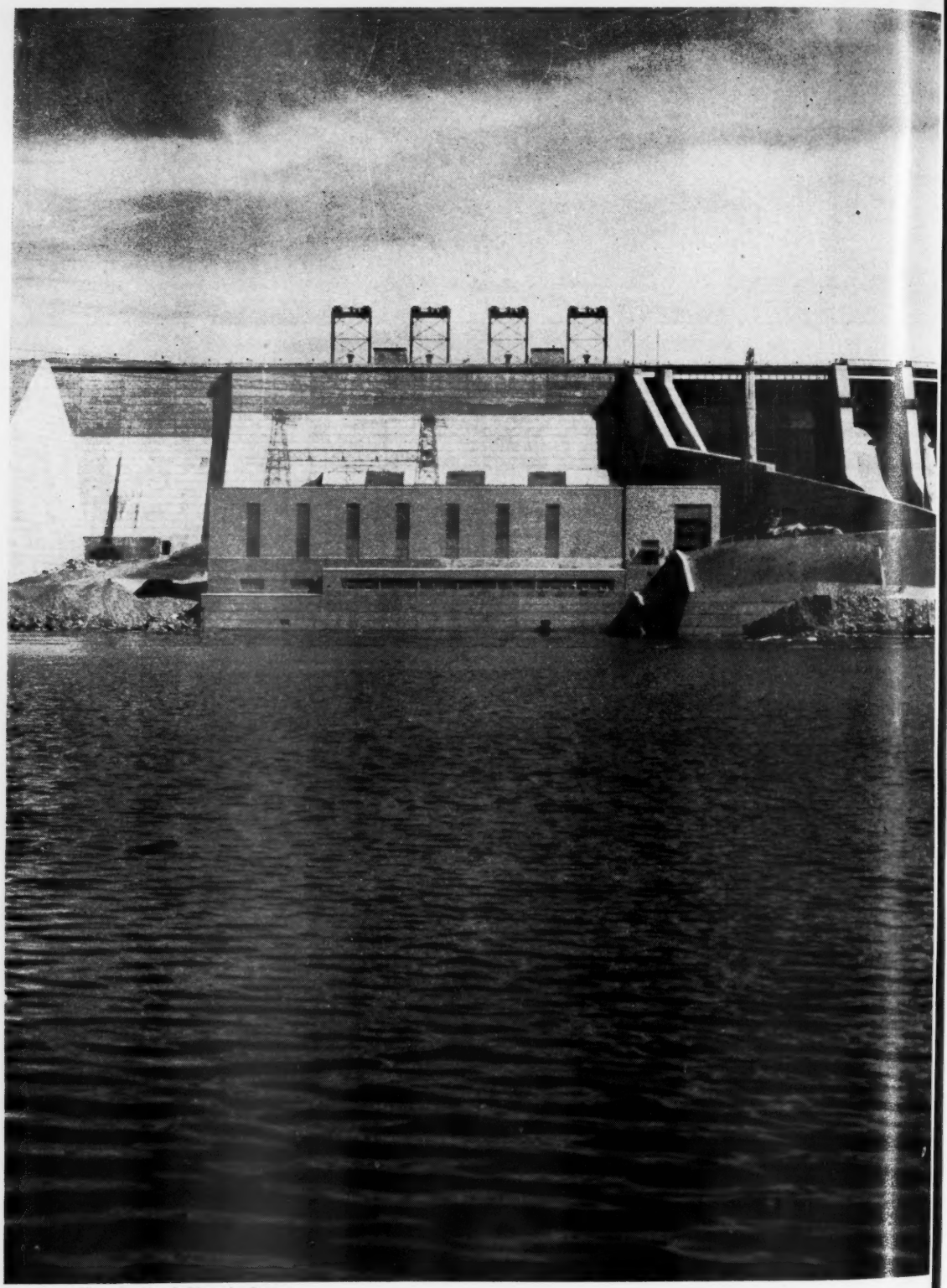
UTILITIES *A·l·m·a·n·a·c·k*

AUGUST

Thursday—15 *Pacific Coast Gas Association will hold annual convention, San Francisco, Cal. Sept. 3–5.* ***Advance notice.***	**Friday—16** *West Virginia Broadcasters Association begins semiannual meeting, White Sulphur Springs, W. Va.*	**Saturday—17** *American Water Works Association, Wisconsin Section, will hold annual meeting, Milwaukee, Wis. Sept. 4–6.* ***Advance notice.***	**Sunday—18** *New Jersey Gas Association will hold annual meeting, Spring Lake, N. J. Sept. 6.* ***Advance notice.***
Monday—19 *University of Michigan Engineering Summer Conferences begin, Ann Arbor, Mich.*	**Tuesday—20** *Western Electronic Show and Convention begin, San Francisco, Cal.*	**Wednesday—21** *Independent Natural Gas Association of America will hold annual meeting, Houston, Tex. Sept. 9, 10.* ***Advance notice.***	**Thursday—22** *American Gas Association will hold industrial gas school, Pittsburgh, Pa. Sept. 9–13.* ***Advance notice.***
Friday—23 *Southern Gas Association begins distribution, operations, and maintenance round - table conference, Chattanooga, Tenn.*	**Saturday—24** *Illuminating Engineering Society will hold national technical conference, Atlanta, Ga. Sept. 9–13.* ***Advance notice.***	**Sunday—25** *Instrument Society of America will hold annual instrument automation conference and exhibit, Cleveland, Ohio. Sept. 9-13.* ***Advance notice.***	**Monday—26** *Annual Appalachian Gas Measurement Short Course begins, West Virginia University, Morgantown, W. Va.*
Tuesday—27 *American Water Works Association, New York Section, will hold annual meeting, Upper Saranac Lake, N. Y. Sept. 11–13.* ***Advance notice.***	**Wednesday—28** *Alaska Independent Telephone Association ends 3-day annual convention, Kodiak, Alaska.*	**Thursday—29** *Tennessee Telephone Association will hold annual convention, Nashville, Tenn. Sept. 12, 13.* ***Advance notice.***	**Friday—30** *American Institute of Electrical Engineers ends 5-day Pacific general meeting, Pasco, Wash.*



Courtesy, New England Electric System

Modern Hydro on the Connecticut River

The recently dedicated Samuel C. Moore station near Littleton, New Hampshire.

Public Utilities
FORTNIGHTLY

VOL. 60, NO. 4 AUGUST 15, 1957

The Rôle of Regulation in a Democracy

The rise of the administrative boards has been the most significant legal trend of the century. More values are affected today by their decisions than are those by all the courts acting on cases other than administrative appeals. This is a thoughtful analysis of the genesis of the state public service commission as part of this trend.

BY THE HONORABLE ARTHUR L. PADRUTT*
MEMBER, WISCONSIN PUBLIC SERVICE COMMISSION

IT has been said that "the amazing thing about the American system is not that it works, but that it works so well." Equally amazing is that it has endured so long, for it is today the oldest government on the face of the globe. We, of this generation, have witnessed the birth, rise, and destruction of many of the major political systems of the world and scores of minor ones. Whole economic systems have been discarded and strange and alien philosophies have been substituted for those we have found to be sound and constructive.

While it is hardly necessary to mention examples, consider for a moment the history of Germany in the past forty years—empire, republic, dictatorship, and again a republic—with a split personality. Consider France and its shaky political system; Italy and its Germanic cycle; the re-

* For additional personal note, see "Pages with the Editors."

markable changes in the composition of the British Empire. Consider the economic chaos wrought by the Bolshevik revolution and its aftermath in Russia and the satellites. Indeed, if we reflect but a moment, we must conclude that nowhere is man more fallible than in the conduct of his own affairs.

Consequently, it is refreshing to look on the pages of history and see there recorded the success of the American experiment in self-government. We would indeed be ingrates of the first water—or mental dullards—if we did not count ourselves thrice-blessed for participating in, and being the beneficiaries of, that system. However, to fully appreciate these blessings, a complete understanding of the theory, scope, and function of our government is required.

WHAT is there about this system that has caused it to be unique among the institutions of mankind? And what has all this to do with the public service commission and the regulation of industry?

Some of the answer is to be found in the origin of the system. Conceived in the minds of men of daring and genius, it was violently executed amid the flames of revolution. Subject to the stresses of a rapidly expanding physical frontier, it was tempered by the mighty forces unleashed by the War between the States. Though the frontier is gone, stresses of another, even more challenging nature are at work as technological achievements and discoveries have literally exploded upon us. Today, as we stand on the threshold of the atomic era and all it portends, we become aware that the same imaginative spirit that gave birth to our system is still at work.

A good bit more of the answer is to be found in the system itself. The idea of a triune system consisting of the executive, legislative, and judicial branches, designed to serve as a system of checks and balances, one on the other, is the basic concept of our governmental structure. It is the foundation—if you please—supporting all the rest. Later, we have become accustomed to the idea that there was a fourth factor involved, the administrative agency, which somehow played an interrelated rôle with the others.

BEFORE pursuing this theme further, however, it is necessary to dwell on one of the characteristics of the American system which not only made possible its survival, but which inevitably led to the growth and development of the administrative agency—and makes necessary this inquiry into the position of the public service commission—in a democracy. This element is the characteristic of *flexibility;* that is, the ability to conform to changing conditions — physical, social, economic, technological—and still retain the initial concept.

A rigid, inflexible system would not have survived the dissensions which marked the immediate postrevolutionary era, but would have foundered on those shoals with no opportunity to navigate the hazards of the future.

To have met and overcome these hazards demonstrates the inherent flexibility of the system. Add to this ferment the interplay between the federal system and the states; stir in the lives and energies of the devoted men of the past and the present, and we have the essence of the system which cannot be matched in terms of grandeur among human institutions.

THUS, with these basics behind us, it becomes readily apparent how and why the administrative agency came into being. Necessity was its father, spurred by a changing and rapidly expanding complex of problems—social, economic, political.

A few years ago the Wisconsin legislature had before it so many proposals concerning the setting of hunting and fishing seasons, bag limits, hours of shooting, and related issues that other grave questions requiring legislative attention were in danger of being overlooked. Establishment of the Conservation Commission freed the legislature of the necessity of dealing with these matters, leaving it better able to deal with the other serious problems of government. The conservationists were happy, for now they would have experts and specialists dealing with their program; the general taxpayer had reason to be pleased, for his questions could be dealt with by the legislature with greater deliberation, resulting in a better solution.

We find about 80 state administrative agencies officially listed in the 1956 *Wisconsin Blue Book,* designated as boards, commissions, or departments. Some of the larger agencies are the conservation department, the board of health, the highway commission, the industrial commission, the motor vehicle department, and the public service commission. In total, they cover, within legislative limitations, the whole range of state government—executive, legislative, and judicial.

IN 1951 the late Justice Jackson of the United States Supreme Court commented in an opinion, "the rise of administrative bodies probably has been the most significant legal trend of the century and perhaps more values today are affected by their decisions than by those of all the courts, review of administrative decisions apart. . . . they have become a veritable fourth branch of the government which has deranged our three-branch legal theory, much as a concept of a fourth dimension unsettles our three-dimensional thinking."[1]

A casual examination of the present curriculum of the law schools indicates that a student now spends a greater portion of time in the study of administrative law than was formerly the case. Leading jurists predict that in the foreseeable future, lawyers will spend more time before administrative commissions and departments than before the courts. While that

[1] Federal Trade Commission *v.* Rubberoid Co. (1951) 96 US L ed 1081 at 1094.

¶ *"IT has been said that 'the amazing thing about the American system is not that it works, but that it works so well.' Equally amazing is that it has endured so long, for it is today the oldest government on the face of the globe. We, of this generation, have witnessed the birth, rise, and destruction of many of the major political systems of the world and scores of minor ones. Whole economic systems have been discarded and strange and alien philosophies have been substituted for those we have found to be sound and constructive."*

may not yet have transpired, it may well be a fact in a few more years.

Well, is that good or bad? Certainly the founding fathers, when they created our system of federal and state government with three branches—legislative, executive, and judicial—did not contemplate a fourth branch of government. Whether we classify this field of administrative law as a "veritable fourth branch of government" or as a development well within the triune division of governmental functions, its development has certainly been "the most significant legal trend of this century."

To describe the administrative agencies as a "veritable fourth branch of the government" is, with all deference to Justice Jackson, an exaggeration. There is a distinct difference between the traditional three branches of government and the administrative agency. These agencies do not exist by constitutional authority, they are mere creatures of the legislature. Carrying out whatever quasi-legislative or quasi-judicial power they may be given, they are subject to the restraint and check of the legislature, which may alter their powers or even abolish them. Their decisions and acts are subject to review by appellate courts. In many cases their members are subject to executive appointment, and their appointment must also be approved by the Senate.

The amazing development of this country in production, transportation, and communication is a result of the American genius of business. Along with this development, the American genius for self-government has conceived and evolved this process of administrative law to keep abreast of our economic growth. We can be confident that as our nation grows in strength and power, our administrative laws will grow, not to strangle or hamper business growth, but to co-ordinate it by reasonable, efficient administrative regulation.

It must always be remembered that regulation is an economic function, not a punitive process.

It might be well, at this point, to look at the genesis of this administrative agency, keeping in mind that it is the prototype, not only in Wisconsin, but in the nation. It was created in 1874 and was the first one of two such state agencies in the nation, the other being New York, which was created in the same year. It was not until some seventeen years later that the federal government followed suit with the creation of its first regulatory agency—the Interstate Commerce Commission.

The public service commission, first known as the railroad commission, was created as a result of the recognition by the Wisconsin legislature that the railroads had become so large and powerful that regulation was required, and, secondly, that the details of railroad regulation were too numerous and complex for the legislature to cover by legislation which would be so complete in itself as to require only executive or judicial enforcement. It must, however, be remembered that it was created to regulate certain forms of business activities within the framework of the Constitution which is dedicated to the free enterprise or profit system.

Given the duty to curb abuses which were rampant in the late eighties, the present commission still retains the power to regulate transportation and other industries which are, if unrestrained, in a posi-

Preserving the Enterprise System

"THE free private enterprise system as part of the American way of life must be preserved, for it is to economics what our governmental system is to politics—the best there is. Regulation is a vital guard against imperfections in the free enterprise system. Without such perfecting device, alien philosophies could more easily encroach on our economic and political institutions, endangering them both. Regulation must be reasonable, protecting both consumer and investor. It must be in tune with general trends of business. It must be integrated with the general economy. Current conditions must be recognized. It must always be remembered that REGULATION IS AN ECONOMIC FUNCTION, NOT A PUNITIVE PROCESS."

tion to do great harm to the economic health of the community. Speaking now of the present-day commission, we are commanded to set rates which will earn a reasonable profit for the owners. Conversely, we are required to see to it that the consuming public receives adequate service. A reasonable profit to the owners of the utilities is necessary, for to do otherwise would constitute the taking of property without due process of law and without adequate compensation, contrary to the constitutions of both the state and federal governments.

WHENEVER any business activity reaches a position of potential harm —that is, stands astride the economic life streams of commerce—it has, from early days, been the subject of governmental regulation. This is an historical verity and should be a key to those who seek an understanding of why and when an industry becomes a subject of state regulation.

As already indicated, Wisconsin first attempted to regulate by direct legislation. This was soon discovered to be cumbersome and impractical and the idea of creating an administrative agency was rapidly

put into execution. At first there was created a board of railroad commissioners. In 1876 a single commissioner replaced the board. In 1881 this board became elective. In 1905 a three-member appointive railroad commission was created. In 1931 the present public service commission succeeded the railroad commission. Thus arose the first quasi-legislative, quasi-judicial agency in Wisconsin government, the present public service commission.

Since then the commission's original regulatory powers and duties as to railroad transportation have been expanded to include the motor carriers and the public utilities. In the latter group we find telephone, light, water, heat, gas, electric power, water power, as well as jurisdiction over utility security issues. In addition the commission regulates the level and flow of 8,676 lakes and more than 12,000 miles of navigable streams, the construction and maintenance of over 1,000 dams, establishment of shore and dock lines, and the removal of obstructions to navigation. While the legislature has thus steadily increased the commission's jurisdiction, it has also given the commission broad discretionary powers.

IN the highly technical and difficult problem of fixing utility rates, the law provides that the commission shall fix rates that are "just and reasonable." This broad discretion which the legislature has given the commission is subject only to review by the courts. In delegating the regulation of common motor carriers of freight and passengers as to number, routes, rates, and service, the legislature says that the commission shall determine these questions according to "reasonableness" and "public convenience and necessity." These functions are quasi-judicial in nature. In addition, the legislature has granted to the commission the authority to make administrative rules which have the effect of law and which are designed to implement, interpret, or make specific the legislation enforced or administered by the commission. This rule-making power is quasi-legislative.

At this point, certain of the readers may be tempted to raise the question, "The public service commission—so what?" The answers are dependent upon who asks the question and I wish to first raise the question from the point of view of the legislator, a position with which I am most familiar.

IN the legislative process, the average lawmaker's time is limited; the problems—technical, complex, confusing—are multitudinous. Unless he is a member of the very small group who practice professionally before the commission or has been subject to commission jurisdiction, he has only a vague idea as to the needs, purpose, and function of the public service commission. Consequently, his question "The public service commission — so what?" is not in a flippant vein at all. It is an earnest request for information so that he can better judge and more intelligently vote on the issue before him involving that body. It may be a querulous response to a request for funds to carry on the operations of the commission.

If it is querulous, it must be overlooked, for nowhere is the average legislator more badgered, more harassed, more perplexed than he is in providing the money for the continuation of the services provided by present-day government at the demand of the citizen. As an aside, it may be said

that Mr. Average Legislator has the meanest, most irascible, most unreasonable boss in the world today—the taxpayer at bay.

BUT to answer the question concerning costs of the public service commission, Mr. Average Legislator can be told that better than two-thirds of the costs of operating the department are borne by the utilities regulated. To be specific, 65.3 per cent of our costs are assessed either directly for a particular investigation or generally in the form of a "remainder assessment" to recover the costs incurred in utility or railroad regulation that cannot be ascribed to a particular investigation.

The balance of 34.7 per cent of our costs is financed by direct legislative appropriations out of the state's general fund. This amount is used for regulation of motor carriers, for water resources regulation, and for miscellaneous administrative expenses. However, the general fund is reimbursed out of the highway fund for the amount used to regulate motor carriers. In the fiscal year 1955-56, the legislative appropriation amounted to $312,000. Of this, almost $34,000 was unused at the end of the year and reverted to the general fund.

Thus, the direct cost to the taxpayer was $278,000.

In perusing those figures, Mr. Average Legislator is likely to form an opinion that the state is getting an excellent bargain; *i.e.,* that the regulated industry is paying the costs, and Mr. Taxpayer is getting a break. Not true. It is axiomatic, but not widely realized, that where a given commodity is taxed, the tax is passed along and finally must be borne by the ultimate consumer of the product. So it is here.

The assessments are legitimate operating costs and as such are reflected in the utilities' expenses. Thus the ultimate consumer pays these assessments and the entire cost of this department is borne by the taxpayer. Recognition of this fact insures the careful assessments of our costs.

WHEN Mr. Average Legislator asks his question "The public service commission — so what?" — in whatever tone of voice he asks it or whatever inflection he uses—we, the regulators, owe him a duty to respond. Indeed we must anticipate him if possible. We should explain to him the part regulation plays in our present economy, its theory, practice—in short, the story I have been attempting to

¶ "THE *amazing development of this country in production, transportation, and communication is a result of the American genius of business. Along with this development, the American genius for self-government has conceived and evolved this process of administrative law to keep abreast of our economic growth. We can be confident that as our nation grows in strength and power, our administrative laws will grow, not to strangle or hamper business growth, but to co-ordinate it by reasonable, efficient administrative regulation.*"

set forth here. We must tell him our problems in relation to these things. We must show him that regulation is a part of the free enterprise system, that it complements and completes that system, and that, as such, it is one of the bulwarks of our system against the destructive threat of Socialism and Communism. Show him that it is a safeguard against the imperfections of the capitalistic system; notably guarding against the inherent dangers of unrestrained monopoly. If he, as well as the general public, understands these things, he can legislate more intelligently and it will redound to our mutual benefit, for we shall be better and more realistically governed.

Perhaps the *most* important person who might be sorely tempted to raise the question "The public service commission—so what?" is the boss of all state commissioners. He pays our salary and in the collective is known as John Q. Public, or, to many, as the customer.

WHEN he raises the question, we *must* answer him. The difficulty or ease with which we provide the answer is dependent on the effectiveness of the public relations program we have carried on. Others before me have recognized the signal importance of public relations. A former chairman of the Wisconsin commission, John C. Doerfer, now chairman of the Federal Communications Commission, put it this way:

> A well-informed public is one of the safest pillars in the democratic form of government. An uninformed public can, during moments of hysteria, clamor for changes in the fundamental regulatory laws which may do substantial harm to our way of life.

On another occasion Mr. Doerfer said:

> A democratic government has no greater enemy than an uninformed public.

In the same vein another former chairman of the Wisconsin commission, James R. Durfee, now chairman of the Civil Aeronautics Board, put it this way:

> This matter of wide general dissemination of the facts to the public as to utility regulation presents a problem in public relations for both the commission and the utility companies. For example, how many of the people who complain about utility rates realize the effect of hidden taxes upon those rates? In order to earn one dollar of net return under a 52 per cent corporate federal income tax, the state commission must grant rate increases which are more than twice as large as they would be without this tax.
>
> For example, in Wisconsin, the average total tax cost per telephone is over $2.50 per month. If this fact was pointed out to the customer whenever occasion permits he could understand that the taxing authorities are responsible for a substantial portion of his utility bill, and that this is a matter over which neither the commission nor the utility has any control. A program of intelligent public relations to take these facts to the people must be carried out. Part of the responsibility for this public relations program rests upon the commission and part upon the utilities.

THE day is long past when any business, especially one affected with the public interest, can assume a public-be-damned attitude. The success of a utility

is, in large measure, dependent on the good will of the public.

IN the few short months I have been a commissioner, I have had to readjust my thinking from one who *asks* the question, "The public service commission—so what?" to one who must *answer* it. My answer, formulated out of the elements set forth above, can be briefly summarized:

1. Our political system consisting of a constitutional government composed of three branches acting as checks and balances one on the other, is the best yet devised by man—the administrative agency is a device which perfects the system by increasing its flexibility, enabling it to cope with today's complex affairs.

2. The free private enterprise system as part of the American way of life must be preserved, for it is to economics what our governmental system is to politics—the best there is. Regulation is a vital guard against imperfections in the free enterprise system. Without such perfecting device, alien philosophies could more easily encroach on our economic and political institutions, endangering them both.

3. Regulation must be reasonable, protecting both consumer and investor. It must be in tune with general trends of business. It must be integrated with the general economy. Current conditions must be recognized. It must always be remembered that *regulation is an economic function, not a punitive process.*

4. The regulatory function should be entrusted to the states in all instances except where federal supervision is absolutely required.

Make Government Your Business

"SPEAKING *of taxes, just take a look at the rundown of taxes, month by month. . . . Jot down opposite each item the amount that your company paid last year or expects to pay this year. . . . Now add those figures up. Kind of shocks you, does it? Your company's taxes to provide revenue for the business of government takes more of your income than you have left at the end of the year. Maybe the business of government is* YOUR *business, too.*

"How much time are you devoting to this rather important business of YOURS*? How long since you have told a public official that he was doing a good job, or told a congressional committee how a legislative measure may affect you? . . .*

"Isn't it about time we all realized that the business of government is not just the business of public officials but is just about the most important business that we have? Isn't it time that you resolved to make your voice, and the voice of a successful business community, heard by those who conduct YOUR BUSINESS*—the business of government—at such monstrous cost?"*

—BETHEL B. KELLEY,
Chairman, national affairs council,
Detroit Chamber of Commerce.

Variations of Capacity Costs In Utility Service

There are many differences in cost and price of natural gas as compared with electric utility operations. Here is an analysis on how capacity costs vary in relation to the different types of utility service.

By ORRIN S. VOGEL*

SEVERAL fine articles have appeared recently relating to the subject of the allocation of utility capacity costs, or fixed charges, in the development of utility rates. They call attention to the similarities in the costing and pricing methods applied in rate studies relating to various types of utilities and suggest that the basic principles used in the solution of the rate problems are very much the same.

Although that is true as a broad generalization, it may be very misleading if it creates the impression that methods developed for the solution of costing and pricing problems in the electric utility business, for example, could be used to solve similar problems in a natural gas transmission pipeline operation. Since the operating characteristics of electric utilities differ widely from those of a gas pipeline utility that would be a very dangerous and unrealistic conclusion.

As a matter of fact, there are more underlying differences in the operating characteristics of the various types of utility service than similarities. These differences are more important in the solution of investor-owned utility costing and pricing problems than the more obvious similarities.

The following is a comparison of the principal operating characteristics of the electric with a natural gas transmission pipeline utility in order to determine:

1. What factors and characteristics of their operation have the greater in-

*Director of economic research, Florida Power Corporation, St. Petersburg, Florida. For additional personal note, see "Pages with the Editors."

fluence on the cost of providing service.

2. To what extent the company can control plant investments and associated costs.

3. How those investment, or capacity costs, enter into and affect operating cost and pricing problems.

By costing comparison we mean the assignment of actual operating or book costs to the capacity and commodity components of gas rates, as contrasted with the demand and energy components of electric rates, by classes of service.

Pricing is the apportionment of all normal operating expenses and the return on investments allowed by the regulatory authority to the components of class rates.

Let us examine and compare a few of the basic economic factors affecting costs in an electric and in a natural gas pipeline company operation:

Electric Service

1. The investments are generally in one state or intrastate.
2. Service is predominantly of the retail firm load type, supplied to many small customers.
3. Service areas are very wide and continuous with interconnected sources of power.
4. Customers' requirements, by and large, are unlimited, unrestricted, and continually growing.
5. Anticipated plant capacity requirements must be made available in advance to meet growing demands.
6. The combined use and load characteristics of the firm customer annual requirements limit the use of system facilities to about 55 per cent of the total time.
7. Interruptible and off-peak loads are a small part of the total and would receive only minor consideration in construction plans.
8. The annual maximum load on the electric system is largely established by firm customer requirements which determine the size of the plant and the investment.
9. The diversity of electric class loads is a major factor in pricing electric service.

Natural Gas
Transmission Pipeline Service

1. The investments are usually in several states or interstate.
2. A substantial part of the service may be interruptible and it is mainly wholesale with relatively few customers.
3. Service areas are small and not contiguous, usually with one main source of supply.
4. The supply is often limited in quantity and type of service by contracts that permit a large measure of control over pipeline loading.
5. Line capacity may be limited largely by the control of loads in existing contracts.
6. The annual use of system facilities can be maintained at a high level by established contracts for both large firm and interruptible loads.
7. Interruptible and off-peak loads are often a major part of the total and basic in construction plans.
8. The investment, because of the long hours' use of facilities, is determined very largely on the basis of annual requirement in Mcf.
9. Diversity of loads is not an important factor in the natural gas transmission line business.

This comparative listing clearly demonstrates that the economic factors in the electric and gas business are not alike, but often appear to be diametrically opposite; also that some of the factors have a far greater impact on investments in one type of utility than in the other.

In this article, the problem is to find, if possible, a more realistic basis for the allocation of pipeline capacity costs. All capacity or fixed costs are functions of the investment. They are often called, in rate making, fixed charges and include annual cost of borrowed capital (interest, dividends, amount to surplus), taxes on income, state and local taxes on property, insurance, depreciation, and to a large extent normal maintenance costs.

In the electric and gas business, the capacity costs, or fixed charges, because of the magnitude of the plant investment per unit of service, often exceed 50 per cent of the total cost of providing service. Before these annual fixed costs can be properly allocated in a rate schedule, it is essential to know to what extent customers are responsible for the investments required to provide service and what operating factors associated with their service have the greater impact upon its utiliza-

tion. For without this information, it is impossible to make a proper allocation of the costs. These are the unavoidable accumulating costs that must be paid each year if the business is to continue and earn a fair return.

The principal operating factors associated with the customers' use, affecting the cost of service, are the annual hours' use of the service, called load factor, the maximum or combined instantaneous load of all customers, which reflects diversity of use, and the nature of their requirements as to continuity of service.

BECAUSE of the high investment costs in utility construction for each unit of plant capacity, the associated annual fixed charges, or capacity costs, are always a major part of the total cost of providing utility service. Since the annual capacity costs for any test period are a constant percentage of the investment costs per unit of capacity, regardless of the number of service units produced and sold, the average cost of a unit of service to the customer will always decrease with his increased use of the investment.

If the cost of service required by the customer compels the company to maintain spare equipment, as it does for firm service, this additional investment will proportionately increase annual capacity costs, or fixed charges. The requirement of spare capacity is a normal and compulsory one in the case of electric utilities. The company must be ready to meet all present and the anticipated service demands, regardless of their size or location, in its service area.

In a natural gas pipeline operation, however, this requirement of spare capacity is not so essential. In fact, it is not usually an important consideration either in its construction or pricing problems.

It will be noted that the electric utilities cannot select their customers and that they must serve everyone; also that most of them are firm load customers. The term, firm load, means the customer's right to receive continuous service every one of the 8,760 hours in a year.

Furthermore, these firm load customers on the electric system who establish the peak, or maximum load to be supplied, are largely responsible for both the size of the investment and the annual hours' use of the plant and facilities required to provide the service. This, in turn, means responsibility for the annual capacity costs, or fixed charges.

IN so far as the utility can retain a measure of control over the combined demands and annual consumption of its customers, it can, to that extent, determine and limit the size of the investments required to provide service. There is very

¶ "COSTING *studies are the analysis of actual operating costs, or actual operating results. The methods by which experts apportion the actual operating costs to demand and energy (electric) or capacity and commodity (gas) rate components may vary in detail but the results obtained are usually well within the scope of required rate-making accuracy.*"

little that the electric utility can do about this matter of control over the required investment and its utilization. Even after taking advantage of the effect of diversity of thousands of continually changing firm loads on an electric system, load growth is continuous and the over-all time use of the electric investment by the customers will not, as a rule, exceed 55 per cent of the available total hours per year. This means that, on the average, the investment in electric utilities is seldom used by the customers more than about one-half of the time. Such a relatively poor use of the investment is a very important consideration in the costing and pricing of electric utility service.

That is not true in the case of natural gas transmission line operation. Gas pipeline loads are usually few in number and the larger ones are often selected and established by contract prior to the construction of the gas line, so that a relatively high hours' use of the investment will be assured. At the same time, the pipeline company, by the terms of the contracts may limit both the hourly demands and annual supply, and in that way, retain a considerable amount of control over present and future investment requirements.

These observations again indicate that the investment or capacity cost problems in the electric and gas industries are very different. In the electric industry it is the demand requirements of thousands of firm customers that determine and continually increase the size of the system load and, in turn, the size of the required plant investment.

ONE of the cardinal points made by experts in this field is that "costing is not pricing." Although that is a true and correct statement, a clear explanation of its meaning is not an easy matter. This relationship of costing and pricing is so important that a brief explanation by way of background may assist the reader, even though it may cover familiar ground.

Costing studies are the analysis of actual operating costs, or actual operating results. The methods by which experts apportion the actual operating costs to demand and energy (electric) or capacity and commodity (gas) rate components may vary in detail but the results obtained are usually well within the scope of required rate-making accuracy.

In a pricing analysis, or rate study, weight must be given to many economic as well as costing factors. This type of study is generally based on actual operating results or on the requirements prescribed by a regulatory authority. In pricing, every effort is made to obtain a fair, just, and equitable division of the costs of providing service among the various classes of consumers. These efforts not only weigh the economic factors but reflect the judgment of rate experts and company management. Management, in its deliberations, must also try to balance the rights and interests of the customer, the company, and the investor.

PRESENT utility rate forms have not, as is sometimes implied, grown like "Topsy." They are rather the practical end result of years of experience with rate and billing problems in a very complex and constantly changing business.

The electric utility rate-making problem is mainly one of finding ways of properly and equitably distributing capacity costs, or fixed charges. These costs, as we have previously pointed out, are the

Electric *versus* Gas "Costing"

"THE *electric utility pricing problem is one of collecting for costs imposed by the customers, whereas, in the gas utility operation, the pricing problem seems to be largely the proper assignment of the effect of price discounts or adjustments made for service concessions requested by the company and accepted by the customer. These concessions which reduce the value and cost of service to the customer . . . greatly improve the over-all load factor and earning power of the investment.*"

investment costs and, therefore, include:

1. Annual interest or cost of borrowed capital.
2. Income taxes applicable on income.
3. State and local taxes on investments.
4. Depreciation expense.
5. Maintenance expense.

If the capacity cost, or fixed charges, set out above had the same meaning to the accountant, engineer, financial analyst, lawyer, management, and regulatory expert, the utility costing and pricing problem would be greatly simplified. But that is certainly not the case today, since there is still considerable variation in use and understanding of these terms.

The following statements regarding the meaning of terms as they are used in this study may be helpful:

The Annual Cost of Capital

IN a costing problem this term means the dollars earned and available for bond interest, preferred and common stock dividends, and surplus based on actual operations in the test year. It may be more or less than the amount required to earn the allowed return.

In a pricing or utility rate problem, it is usually included in or related to the amount allowed by the regulatory authority as a fair return, usually in the form of a percentage of the total rate base or investment base.

Taxes on Income (Federal and State)

In the costing problem this expense is the amount of federal and state income tax paid or to be paid on the actual income earned in the test year.

In a pricing or utility rate problem, it

is the calculated amount of the state or federal income tax that must be paid on the allowed income or return. It is determined as a per cent of total investment after taking into account the allowed tax deductions. This calculated per cent of investment is equal to the amount required for payment of the income tax. It will vary with changes in the relationship of the allowed deductions to the total investment base. The deductions will also vary with the growth of the property investment and the composition of the capital structure; that is, the percentage of bonds, preferred stock, and common equity. This calculated percentage of the investment, we observe, is not a constant, but varies with changes in total investment, capital structure, tax rates, and allowable deductions applicable in each rate problem.

State and Local Taxes and Insurance on Investment

These annual fixed costs on property are actual and, therefore, generally understood.

Depreciation Expense

THIS item is a source of considerable misunderstanding. In a costing problem, it is the amount accrued on the company's books as an expense during the test period. The annual accrual or depreciation expense is usually based on depreciation rates determined by management for each class of property. The percentages or rates used should be sufficient to offset the annual depreciation loss of property value not covered by insurance. These rates should accrue an amount in dollars per year equal to the sum of the accumulated annual net physical and functional depreciation losses. Functional depreciation, generally characterized as obsolescence, inadequacy, and supercession, covers the losses caused by factors adversely affecting the efficiency, capacity, and utility life of the property. It should be apparent that the percentages used in the annual accruals are estimates based on experienced judgment and, therefore, must be adjusted from time to time to compensate for changed conditions.

In a pricing or utility rate problem, the depreciation expense may be set up as a fixed percentage of the investment base. This percentage, based on past experience, when accrued over the life of the property, is intended to compensate for the net physical and functional depreciation losses at the date of its expiration.

Maintenance Expense

MAINTENANCE is a variable operating expense and for that reason may not seem to belong in the same category with the other capacity or investment costs. It is, however, like the other costs in this respect; a major portion of it accumulates continuously and all of it is related to the investment. From a costing standpoint it is made up of material and labor charges. It differs from depreciation expense in that maintenance expenses are actually incurred and paid in the current year, whereas the depreciation expense is an estimated amount of which the unused part is accumulated in a reserve for depreciation pending the final disposition of the property with which it is associated. Maintenance expenses are usually caused by physical depreciation and for that reason in costing studies generally receive the same treatment.

In pricing or utility rate problems maintenance expense is a somewhat different matter because abnormal conditions may, and often do, affect the magnitude of certain maintenance expenses incurred in the test year. For that reason the annual maintenance expense used in a rate study may be normalized and prescribed in total amount. It is usually predicated on past experience and average operating conditions.

IN brief the utility costing problem is one of equitably allocating the actual costs of operation, both fixed and variable, to demand and energy or capacity and commodity components on a basis of customer load causation. The costs that accumulate continuously and relate to the investment are normally assigned to the demand or capacity cost rate component. The remaining costs of operation are either of the customer type—such as billing and collecting, sales promotion, and portions of administrative and general—or of the type that is directly related to the volume sold—such as the fuel and a portion of production plant operating ex-

TABLE I

COSTING VERSUS PRICING

Description	*Column 1* *Assumed Investment Data*	*Column 2* *Assumed Operating Data*	*Column 3* *Assumed Annual Allowed Costs for Pricing*	*Column 4* *Assumed Current Operating Costs for Costing*
1. Investment Base	$100,000,000	$100,000,000	...	...
Annual Capacity Costs				
2. Cost of Capital	6%	...	$6,000,000	...
3. Current Pay-out	...	5.7%	...	$5,700,000
4. Amount to Surplus	...	.1%	...	100,000
5. Income Taxes	4%	4%	4,000,000	4,000,000
6. State and Local Taxes	1%	1%	1,000,000	1,000,000
7. Depreciation—Accrued	3%	3%	3,000,000	...
8. Depreciation—Expense	(Current)	...	...	2,000,000
9. Depreciation—Accrued	(To Dep'n. Res.)	...	...	1,000,000
10. Maintenance—Expense	2%*	...	2,000,000	...
11. Maintenance—Normal	...	2%*	...	2,000,000
12. Maintenance—Abnormal	...	.2%	...	200,000
Annual Commodity Costs				
13. Fuel Cost	Actual	Actual	6,000,000	6,000,000
14. Plant Op. Cost (Ex.Maint.)	Actual	Actual	1,000,000	1,000,000
15. Accounting and Collecting	Actual	Actual	600,000	600,000
16. Sales Promotion	Actual	Actual	400,000	400,000
17. Administrative and General	Actual	Actual	600,000	600,000
Annual Cost			$24,600,000	$24,600,000

The purpose of this tabulation is to illustrate the relationship between costing and pricing using very broad assumptions. In an actual cost study each segment of the utility investment and each expense incurred would be studied separately to arrive at a fair and equitable assignment of the costs to capacity and commodity components.

*Two per cent used for comparative purposes only. It is always a variable in actual operations.

Column 1 contains the investment base ($100 million) and the pricing factors in per cent which we have assumed were allowed by the regulatory authority.

Column 2 contains the derived factors based on the assumed operating expenses or book costs, set out in Column 4.

Column 3 is a tabulation of the capacity and commodity costs obtained by applying the rates in Column 2 to the assumed utility investment base, $100 million.

Column 4 is a summary of actual test year operating expenses as they are assumed to appear on the company's books.

penses. Those costs are largely assigned to the commodity or energy rate component.

The utility pricing problem is to develop just, fair, and reasonable rates and charges that will equitably distribute the cost determined by studies of actual and anticipated operations on the basis of customer or class cost responsibility. There are, however, three objectives in the development of a rate pattern: The first is simplicity; the second is a plan that will promote the business—make full service available to the largest number and at the same time generate sufficient revenues to pay all of the operating costs, including a fair return to the investors; and the third is to provide a measure of long-range protection to the investor against fluctuations in business and changes in the customers' use habits that may affect income.

Table I, page 232, is an attempt to illustrate mathematically the relationship between some of the principal costing and pricing elements in a rate study.

We observe in this study that a part of the over-all money or capital cost ($6 million) was actually paid out ($5.7 million) and that only a part of the balance ($100,000) was retained in surplus (4). This money ($100,000) would normally be used either for construction or retained to pay dividends in a lean year. The balance in this case ($200,000) we have assumed was used to cover the abnormal maintenance charge (12).

Only a part of the depreciation expense ($3 million)—and this is the usual case—was used for retirement of property in the test year. The balance ($1 million) went to the depreciation reserve, pending future retirements.

The maintenance expense allowed ($2 million) was sufficient for normal cost (11) but not enough to take care of the abnormal maintenance assumed to have been incurred during the test year ($200,000) (12). That expense was paid out of the dollars earned that normally would have been made a part of surplus (4).

We have assumed in this broad illustration that the commodity costs (13-17) equal the revenue generated by the commodity component of the rate structure. On that basis, the figures in Column 4 equal those in Column 3 (13-17).

This very limited study may be helpful to those who have not had an opportunity to make a complete study of the varied use of these terms.

As soon as an investment has been made in utility plant facilities required to provide service, the investment costs begin and from that time on there is no way of preventing their constant rate of accumulation. This is true because utility properties are constructed almost entirely by using borrowed money.

Before the company can have sufficient operating income with which to pay the annual cost of capital, it must first earn enough to pay the associated federal income tax. Operating income is the amount of revenue left after the company has paid all taxes, annual depreciation, maintenance, and operating expenses. A cost of money of 6 per cent annually for invested capital will require an income tax payment equal to about 4 per cent of the total investment. The annual cost of capital and the associated income tax items, 2 and 5 above, are the direct money costs.

To illustrate the costing and pricing characteristics of the capacity cost prob-

Magnitude of Capacity Cost

"IN the electric and gas business, the capacity costs, or fixed charges, because of the magnitude of the plant investment per unit of service, often exceed 50 per cent of the total cost of providing service. Before these annual fixed costs can be properly allocated in a rate schedule, it is essential to know to what extent customers are responsible for the investments required to provide service and what operating factors associated with their service have the greater impact upon its utilization. For without this information, it is impossible to make a proper allocation of the costs."

lem and the effect of load factor or annual use of the facilities on cost of service, we shall assume that an investment of $500 is required to install one unit of plant capacity; and that the annual capacity costs, or fixed charges, as a per cent of the investment are: annual money cost or return 6 per cent, federal income tax on the return 4 per cent, depreciation 3 per cent, state and local taxes 1 per cent, and maintenance of plant and equipment 2 per cent, a total annual investment (demand or capacity cost) of 16 per cent.

BASED on the assumptions made, the annual investment cost to the company is 16 per cent of $500 or $80. If the facility, or investment, is used continuously throughout the year, the unit investment cost based on the annual hours of service is a small item, $80 divided by 8,760, or $.00913. If the investment is used half the total time, the unit cost will double, $.01826. Regardless of whether the customer uses the service or not, the annual cost to the company occasioned by the customer's load is still $80 per year for

each $500 invested in plant. Obviously, the customer or customers who occasioned or are responsible for the $500 investment should pay the annual capacity cost. The capacity cost per unit of service is always in proportion to the number of units consumed (Mcf) or hours use of the service (kwh).

Dr. Herz in his paper, "Impact of Cost Allocation on Gas Pricing,"[1] said that the customer having a 100 per cent load factor, or having a 100 per cent use of the plant investment, should pay the full capacity cost. That is certainly true because no one else is responsible for the investment nor can they share its use. The importance of the capacity or demand charge in a pricing problem is directly proportional to the amount of unused investment or capacity. If there is little unused investment or plant capacity, there is little need for a separate study and apportionment of the capacity cost.

THERE is usually a wide difference between the hours of use and the composition of the electric system loads and that of the natural gas pipelines. Chart I, page 236, illustrates these differences. Column A is a graph of the hypothetical loading of a natural gas pipeline system. Column B is a graph representative of the division and time use of class loads in an electric system.

The division of the class load on a use basis is shown in the chart as follows:

	(A) *Gas System*	(B) *Electric System*
Interruptible Service .	65%	15%
Firm Service	30%	45%
Unused Capacity	5%	40%

[1] "Impact of Cost Allocation on Gas Pricing," by Henry Herz, PUBLIC UTILITIES FORTNIGHTLY, October 25, 1956, Vol. 58, No. 9, p. 685.

In the illustration of electric utility operation, 40 per cent of the maximum plant capacity, or investment, is unused. This assumed annual use is a little better than normal for the average electric utility operation. On this basis 40 per cent of the total annual earning power of electric investment has been lost. The annual investment costs, however, continue and accumulate over the entire period. They are approximately the same, regardless of the hours of use. It is this normal high per cent of unused capacity in the electric utility operation that makes the use of a separate demand charge imperative in contracts for large blocks of electric power.

In the assumed gas operation, only 5 per cent of the annual plant capacity is unused. On that basis, the effect of capacity costs on price of service per Mcf is not as significant as in the electric operation. This we shall demonstrate later.

BECAUSE of the difference in capacity cost responsibility in the electric and gas operations, the capacity cost problems seem to fall in two separate and distinct classes. In the electric utility industry, the investment costs are in one class because they are unavoidable and occasioned by the requirements of firm customers. In the natural gas business the capacity costs are in another class because the size and effect of capacity, or fixed charges, on price can be largely predetermined and controlled by the company.

The electric utility pricing problem is one of collecting for costs imposed by the customers, whereas, in the gas utility operation, the pricing problem seems to be largely the proper assignment of the effect of price discounts or adjustments made for service concessions requested by the com-

pany and accepted by the customer. These concessions which reduce the value and cost of service to the customer, as we shall see later, greatly improve the over-all load factor and earning power of the investment. This greatly increased earning power makes possible substantial reductions in the over-all and unit cost of service.

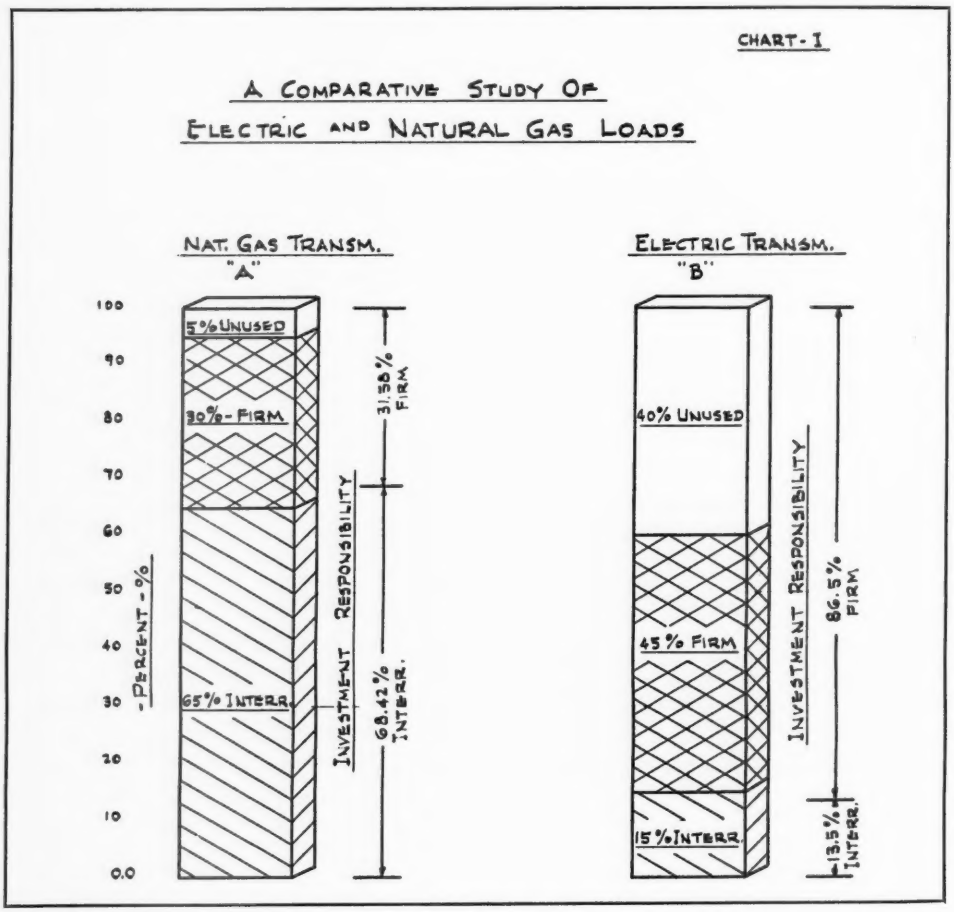
Dr. Herz, in his paper, suggested that there are seven standards for judging the reasonableness of a natural gas rate:

1. All customers should pay a share of the capacity costs.

2. Those customers using the capacity for longer periods of time should pay a greater share of the capacity costs.

3. Any customer using the capacity all of the time—that is, with a 100 per cent load factor—should pay the full capacity costs on the investment required to provide the facilities needed to serve the load.

4. The capacity charge should not change rapidly.



5. The capacity cost determined for one class should not be the required pattern for another.

6. Customers using service on peak should pay the higher capacity costs.

7. Interruptible service should pay a lower capacity charge.

A reasonable and equitable solution to this pricing problem will be obtained if we can develop a method of capacity cost allocation that will satisfy the standard set up for judging a satisfactory natural gas rate.

A VERY good way to test out the proposed plan is to apply it to a specific problem and then see if it satisfies the proposed standards. For this test we shall assume:

1. That the commodity or base cost to the seller is 16 cents per Mcf.

2. That the capacity cost, including a fair return, is 18 cents per Mcf (based on estimated sales).

3. That the small amount of unused capacity can be ignored on the theory that the importance of a demand charge is inversely proportional to the load factor and also because of the seller's partial responsibility for the unused investment.

4. That a discount of 10 per cent has been granted by the company to the interruptible customers for their service concessions.

5. That the distribution of the load between classes of customers is as shown in Chart I, Column A.

We shall also assume that:

1. The demand cost is a constant to be applied on the basis of Mcf consumed.

2. The discounts or service adjustments should be apportioned to firm customer costs.

The solution of the problem is then as follows:

For the interruptible gas we get a rate of 32.4 cents,[2] arrived at in the following manner:

1. Capacity cost 18 cents, plus.

2. Commodity cost 16 cents base rate, less 10 per cent discount. (Result, 14.4 cents.)

3. Total cost, 32.4 cents.

For the firm gas, we get a rate of 37.46 cents,[3] arrived at in the following manner:

1. Capacity cost 18 cents, plus.

2. Commodity cost of 16 cents base rate, plus 10 per cent per Mcf ratioed in proportion of interruptible to firm. (Result, 19.46 cents.)

3. Total cost, 37.46 cents.

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[2] *Rate for Interruptible Gas*
Cost = D + C
D = Demand Cost
C = Commodity Cost
Y = Base Cost
Z = Discount in Per Cent (For Interruptible Service)
Cost = D + Y − Z = 18¢ + (16¢ − 10%)
Cost = 18¢ + 14.4¢ = 32.4¢

[3] *Rate for Firm Gas*
Cost = D + C
D = Demand Cost
C = Commodity Cost = Base Cost + (Discount for Interruptible Service)
Y = Base Cost
Z = Discount
W = Ratio of Interruptible/Firm 65/30 = 2.166
C = Y + W (Y × Z%)
Cost = D + C = D + Y + W (Y Z)
Cost = 18¢ + 16¢ + 2.166 (16 × 10%)
= 18¢ + 16¢ + 3.4656¢
= 37.4656¢/Mcf

Proof

14.4¢ × 68.42 =	9.8525
19.4656 × 31.58 =	6.1475
	16.0000

Cost and Use of Utility Investment

"BECAUSE of the high investment costs in utility construction for each unit of plant capacity, the associated annual fixed charges, or capacity costs, are always a major part of the total cost of providing utility service. Since the annual capacity costs for any test period are a constant percentage of the investment costs per unit of capacity . . . the average cost of a unit of service to the customer will always decrease with his increased use of the investment."

How well does the plan satisfy the proposed standards for testing the reasonableness of gas rates? The results of the test can be compared with the standards as follows:

1. All customers should pay some share of the capacity costs. In the proposed plan, the capacity cost is treated as a constant. Therefore, every customer using the service pays a share of the capacity cost in direct proportion to the Mcf consumed.

2. The customer that uses capacity for longer periods should pay a higher charge.

If the customer uses the capacity for a longer period, the operation will consume a larger quantity of gas and since the capacity charge in this plan is a constant per Mcf the customer using more gas will pay more and in proportion to the amount used.

3. Any customer who uses a part of the capacity exclusively (that is 100 per cent of the time) should pay all of the assignable capacity costs.

The capacity cost per Mcf in this plan is a prorate of the assigned annual cost. Therefore, 100 per cent of the prorate is the assigned capacity cost and that is in accord with the standard.

4. The capacity responsibility assignment should change slowly and predictably with the pattern of sales distribution, among the different types of service.

The cost of service would not change rapidly in the proposed plan because the capacity cost is a direct function of the total quantity of gas used or to be used.

5. The capacity cost allocated to one class of service should not depend on the way in which the remainder of the capac-

ity costs are allocated to other classes.

This standard is met by decreasing the cost of limited service by the amount of the discount or adjustment.

6. On-peak customers should pay more than off-peak or interruptible customers.

In the test problem a 10 per cent discount was given to off-peak customers.

7. Capacity costs assigned to a unit of interruptible or restricted service should be at a lower cost and in proportion to the degree of restriction.

This standard is satisfied by the assignment of the discount, or revenue decrease, to the commodity cost of higher quality service.

IN the test problem, an assumption was made that the company granted a discount of 10 per cent on all sales to interruptible customers in order to get that high load factor type of business.

This rate plan may seem to place a burden on the firm gas users. In actual practice, this would not be true because the interruptible sales would greatly increase the utilization of the investment and its earning power. This would make it possible to substantially reduce the over-all cost per Mcf.

This fact can be demonstrated by the following example. We shall assume that

1. The cost of natural gas transmission line is $100 million.

2. The line can deliver 111 million Mcf per year at full load.

3. That the fixed charges, or capacity costs, are 16 per cent of the investment per year. Those costs will include a 6 per cent return as the cost of borrowed capital.

The annual capacity, or fixed charge, cost on that basis is $16 million.

4. That the line, including interruptible sales, would operate at 90 per cent capacity and deliver 100 million Mcf per year.

On the basis of assumed operation, the unit capacity cost is 16 cents per Mcf. If, for example, the line, exclusive of the interruptible, could deliver only 30 per cent of its capacity, or 33 million Mcf per year, the capacity cost per Mcf would be 48 cents. This example indicates how important the use factor is on capacity cost and why a higher utilization of the investment benefits all customers.

IT seems to me that natural gas transmission pipelines are built on the basis of the annual quantity to be delivered in Mcf and not on a capacity or peak-load basis. It is obvious that the load factor must be maintained at a high level or the price charged for the gas, if it is to be delivered any great distance, would not be competitive and the entire project uneconomic.

The purpose of the rate adjustments, usually requested by the company, is to increase the quantity of gas delivered, in Mcf, per year without increasing the investment. For that reason, the effect of the adjustments on the cost of service should be reflected in the commodity and not in the investment or capacity cost element of the rate structure. This article shows that the gas pipeline pricing problem is not primarily one of capacity cost allocation. It is a problem of the proper development and apportionment of adjustments (proposed by the company) that affect the quality of service.

Keeping Uncle's Nose Out of State Affairs

It is axiomatic that the states cannot get federal money without taking the advice and controls that go along with it. The recent controversy over highway billboard regulation is a case in point.

By T. N. SANDIFER*

CHAIRMAN Alcorn of the Republican National Committee came away from a regional political gathering with what must have been startling news to some Washington elements still steeped in the tradition that federal money can buy anything.

The gist of his news is that the states are backing away from federal "grants" or allocations of federal funds for state purposes. The reason, of course, is that paraphrasing the old saw, "Trade Follows the Flag," Uncle Sam moves in with his money.

Much as the states love their Uncle, their affection for him is much stronger when he stays in Washington. In the present instance their antipathy to Uncle seems to spring from too close acquaintance, or after more than twenty years of Uncle throwing his weight around, not to mention his money, it might be better to say, they have become too familiar with Uncle to want him in close proximity.

STILL on general ground, the states in too many instances, have discovered that Uncle can cost them money, and since he claims priority on the major sources of such funds, which used to belong to the state governments, they are having an in-

*Veteran Washington, D. C., correspondent. For additional personal note, see "Pages with the Editors."

creasingly difficult time in finding the money. And when state governments cannot find the money to match their Uncle's expansive ideas, Uncle puts away the pocketbook. He then frequently turns, with undisguised favoritism, to those states whose governments are reckless or grasping enough to levy the required increased tax burden on their people. But, primarily, the case boils down to not wanting Uncle in the house with them.

He is too bossy. The latest illustration of this trait, at this writing, is the federal highway-aid program. Nothing wrong with the program in itself, but knowing that where federal money goes, dictatorial power increasingly goes with it, various factions wanting to get their hands in state matters got on the same train carrying the money, so to speak.

There are people, among others, who adore scenery. They seldom have time to look at it, since most of them are busy in various causes, among them, enlarging the federal domain; but they are red hot. For years, on purely esthetic grounds of course, they have wanted to get their hands on outdoor advertisers—for throttling purposes.

WHAT a man does with his farm property, or his city property, within police limits, is generally recognized as a state matter. The states, until now, have had sole power to say whether there shall be a lighted advertisement along a given stretch of highway, and where it can be located with reference to the need to see it, and how it shall be constructed and illuminated, if it is lighted.

But the enthusiasts, and they include some notable figures who will not be advertised here, saw in federal grants for the highway program a chance to move in. They have made an issue that has virtually transcended the fundamental one of getting the highway started. Since this issue is of direct concern to the utility field entirely apart from the fact that it threatens to establish just one more federal hand gripping a state's controls, and a hand which can use the leverage in more and new directions, it deserves some elaboration.

THE merits or lack of them in outdoor advertising as such are not being considered here. The fact does deserve some exploration that the utility interests have a multimillion-dollar business at stake, which would be obliterated. So do other commercial enterprises, with an even larger financial stake.

The National Electric Sign Association, for one, comprising some 5,200 manufacturers of all types of electric signs and advertising displays, and representing also some 300 manufacturers and supply jobbers of material and equipment used in manufacture, servicing, and construction of electric signs, have an annual payroll of around $125 million. They employ approximately 34,000 people. Their representatives were quick to protest strongly a proposal to wipe out, by federal fiat, a major part of their industry.

Labor organizations, numbering their locals by the thousands, who would be adversely affected, likewise reminded the Senate legislators that esthetic demands are one thing, and bread and butter are another. This bread and butter, it was pointed out, comes from the business of literally millions of large and small retail merchants who like that form of advertising.

WITHOUT getting into statistics, the outdoor sign industry has been a market for many years for power and light. A sign that advertises in daylight is earning only half its keep if it goes out of business at night. Conversely, many urban installations, familiar in any city, attract relatively little attention in daylight but go to work at night under lights. It is safe to say a substantial percentage of outdoor signs, therefore, are lighted.

This market would be killed. The campaign to drive outdoor advertising out of existence was getting nowhere in particular until now, because of state control, established by every legal precedent. With the fantastic outlay of "federal" money contemplated in this program, however, and to be expended over more than a decade, the antibillboard factions saw their chance. Parenthetically, they were not alone. The chance to up the daily wage on the roads through federal fiat was not overlooked by the appropriate Washington groups in that field, either. There would be a string to the federal dough.

No state could get its full share of the federal allotment, which it should be recalled, was states' money and cities' money before it became federalized, unless that state agreed in advance to prescribe certain steps with regard to the right of way.

The tactics in this drive are all too familiar to the private utility field. That industry, too, was ONCE state regulated. State regulation here has been breached through the medium of multistate or federal-state projects. Currently, outdoor advertising is subject to state control and state sentiment. As one witness pointed out, the pending legislation is a complete reversal of congressional policy, as expressed in an earlier law on the subject, that use of federal highway funds cannot be used to coerce state action.

It was also stressed that this one phase of the legislation would wipe out, in a fast motion, the "due process" clause in the Constitution, and in most state constitutions, dealing with expropriation of property. The utilities, again, have a right to be somewhat skeptical of the validity of this clause in their case, on past history, but it appears that other industries are now in line for the same treatment.

THERE are states which, as a public matter, do not mind billboard advertising, lighted or unlighted. Some of these states have large rural populations which derive substantial income from leasing space in appropriate locations for commercial advertising. That term is used advisedly because there are some very conspicuous instances in which public bodies

¶ "WHAT *a man does with his farm property, or his city property, within police limits, is generally recognized as a state matter. The states, until now, have had sole power to say whether there shall be a lighted advertisement along a given stretch of highway, and where it can be located with reference to the need to see it, and how it shall be constructed and illuminated, if it is lighted.*"

use the boards, too, for their own purposes.

There are states in which dominant commercial interests would be seriously affected without such advertising. Areas devoted to tourism for illustration; some worth-while and major resort developments and recreational areas, depend on such advertising to inform visitors of their location and how to reach it.

No matter to the antiadvertising forces. They swept over protests that the highways were being laid out with regard to travel time and not to favor locations on the way, hence advertising was doubly important. Some of these interests protested in Congress that they might as well shut up shop. Not only was the route bypassing them; there would be no way to attract visitors to a detour. Even some state spokesmen took up the issue.

Here was where the federal club would be wielded. The policy would be laid down from Washington; no outdoor advertising, or, if any, it must be so far from the right of way as to be commercially worthless. Any state refusing to sign in advance an agreement, in effect, to enforce these standards would get less money or none. That is the way Washington has worked it since the days of Harry Hopkins, and that is the way it is proposed to work it now.

THE ruthlessness of this drive can be illustrated; in connection with congressional consideration of the highway program, it was estimated that it would cost about $6,000 per mile to acquire the so-called negative easements that would be required under the no-advertising dictum.

The land would be acquired either by purchase or condemnation, not, it should be pointed out, for the right of way as such, but to insure that no signs marred the way. A witness protesting this deal gave the Senate committee his analysis of that $6,000. In a 300-foot right of way, there are approximately 36.3 acres. If the 40,000 miles of the pending highway system is related to the total outlay of say, $5.5 billion, it works out at a total of $137,500 per mile, or for the 36.3 acres mentioned, $3,787 per acre.

For acquisition of easements, assuming that part of the program goes through, some 1,500 feet comprising 750 on either side of the road would be acquired. For one mile this would be five times the acreage required for the right of way alone, or 181 acres. Now, coming back to the figure of $6,000 estimated as the cost of acquiring the esthetic easements, and applying those dollars per mile, it works out that the farmer or other landowner would get $33 per acre. This would not be per month, or per year. It would be final payment. No ifs, ands, or otherwises. He gets $33 per acre—the average value per farm acre is roughly $95—and for that he gives up his land, his income from the advertising, and one more chunk of independence of federal domination.

SINCE it is very evident that no farmer is going to settle on that basis, the prospect is that the demand to kill the advertisers will cost, instead of $300 million which has been advanced as an estimate, nearer $1 billion or more. The price of fanaticism is never cheap.

Pending changes in the highway program would add 7,000 miles to the original total, and would extend the period to twenty years instead of thirteen. On this

Night Work for Signs

". . . the outdoor sign industry has been a market for many years for power and light. A sign that advertises in daylight is earning only half its keep if it goes out of business at night. Conversely, many urban installations, familiar in any city, attract relatively little attention in daylight but go to work at night under lights."

basis the figures just put down here would be enormously expanded. More important, from the angle of federal domination of what has always been a state province, the federal share in the cost would be expanded from the initial 90 per cent to 90.75 per cent if, please note, a state agrees to limit erection of advertising signs or displays within 600 feet of the paved surface of the main traveled roadway.

One reason for challenging the cost to the taxpayer of this already obviously expensive drive, is that a considerable part of the new federal-state route would extend through Oklahoma cities, for instance, not to mention other valuable properties in that state. The proponents of the antiadvertising legislation showed no concern that, under their demands, money would have to be diverted from purely roadway purposes, to push back for the designated hundreds of feet, signs or actual properties, in highly valuable urban locations, in Oklahoma as well as others.

It is not a little ironical that much of this projected federal domination would be in states already heavily enmeshed in the public power maze. Washington would have still another grubstake in these localities. And since Washington has a way of making itself felt without much regard to its host region or state, this has implications far wider than the fate of the billboards. Senator Neuberger (Democrat, Oregon), by the way, is the prime mover in all this legislation.

Former Senator Scott Lucas has summed up the potentialities of further federal control, by whatever means, in a statement he made on the whole question. He asked the committee:

Would you go along with the provi-

sion in a bill calling for the federal government to aid in the construction of school buildings if it contained the provision that the design of the buildings must conform to certain standards prescribed by the Office of Education, or that the local school curriculum must conform to the politics of the party in power?

When protagonists of the advertising ban raised hands in holy protest, Mr. Lucas said, "this is not a frivolous or farfetched question. This is exactly what is possible."

"For," said ex-Senator Lucas, "if the government, through the Department of Commerce, can condition the maximum amount of aid to a state if it takes certain action, and a reduced amount of aid to a state if it fails to take certain action, then the government is limitless in the types of conditions and the extent of aid it can render, all conditioned on the state taking certain action."

SENATOR Neuberger, as might have been anticipated, was among the most vehement of the hand raisers at this, but Lucas refused to be put aside.

"You will go far before you find as bald a purchase of state sovereignty as the administration bill contains," he told his ex-colleagues. He reminded his hearers that both Secretary of Commerce Weeks, and Senator Neuberger referred to "penalty" provisions in the bill, which is in both that measure and the one by Senator Neuberger.

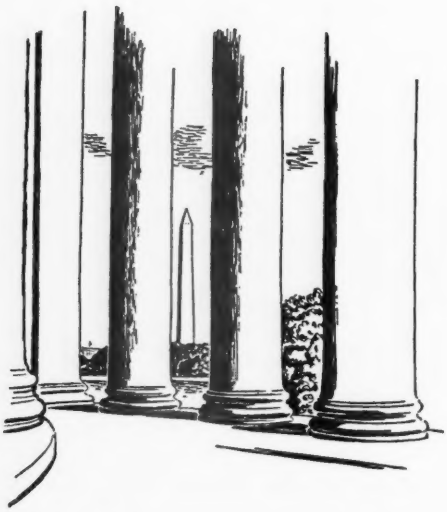
These originally, would have clipped 5 per cent from the state share, and now would shave it by 15 per cent. In other words, a state seeking to participate in the federal highway-aid program would have to raise an additional 15 per cent revenue if it failed to go along on the antiadvertising ban. With state sources of revenue already dried up, or drawn on to the limit, as Secretary Weeks' own department can testify, this extra 15 per cent would be an intolerable "penalty."

It all boils down to the question of states' rights, said Lucas, and it is evident that this term is not confined to the sociological field by any stretch.

It is a poorly read individual indeed, today, who cannot name at least a handful of ways in which Washington injects its dominating voice into local affairs, always through federal money.

THIS writer was reminded, while the above legislation was under consideration, of a remark he heard the late Harry Hopkins make in the early days of his régime. Federal aid on a major scale was just being launched to the various states, struck by depression. One governor apparently had balked at some of the terms on which this aid would be extended to his state. Asked by newsmen what would happen, Harry replied, "We'll just have to put his feet to the fire."

The states have been getting toasted off and on ever since through the same tactics, and to an increasing degree. Which may help to explain why they are now backing away when somebody from Washington comes in their midst waving some easy money. They have learned to know that the strings will be drawn tight right after they have signed. They are tired of the hotfoot.



Washington and the Utilities

Hell's Canyon Scuttled

IT was the House Interior Affairs Committee which finally pulled the plug on the long-dangling and highly controversial effort to build a federal high dam on the Snake river at Hell's Canyon. By a close partisan vote of 16 to 14—with two southern Democrats joining a solid Republican minority—the committee voted to knock out the enacting clause of the bill which would have authorized federal construction of the high dam on the Hell's Canyon reach of the Snake river (the deepest river gorge in North America) between Idaho and Oregon.

Representative John P. Saylor (Republican, Pennsylvania) later said the Republicans plan to shelve the other Senate-passed Hell's Canyon bill at a meeting of the House Reclamation Subcommittee. This bill also calls for federal construction of the dam. Prodam Democrats conceded that if the Senate bill were brought up, opponents have the votes to dispose of it.

The Federal Power Commission, with administration backing, has authorized the Idaho Power Company to build three low dams on the Snake river, two dams are already under construction.

Representative Westland (Republican, Washington), one of those voting against the federal dam measure, later made public a letter he received from President Eisenhower stating his reasons for opposing the federal dam. The President said: "The nation cannot and should not finance all water resource developments with federal funds. The Idaho Power Company development will permit the federal government to devote more of its financial resources to other developments which are clearly beyond the capabilities of nonfederal interests alone."

PRESIDENT Eisenhower stated that he is "firmly convinced that in the long run the Idaho Power Company development will provide benefits to the people of the Pacific Northwest and the nation as a whole commensurate with those which might reasonably be anticipated" from the high federal dam.

Representative Gracie Pfost (Democrat, Idaho), who sponsored the bill, predicted that Idaho Power "will never fully develop the water resources that are our God-given right." She said that in allowing the utility company to go ahead with

construction "we are giving Idaho Power Company the Snake river and paying them for taking it."

Representative Ullman (Democrat, Oregon) said that killing the legislation would give Idaho Power Company "an economic stranglehold" on the Northwest.

Following is the committee vote: Against the dam were Democratic Representatives Haley (Florida) and Shuford (North Carolina); Republicans Miller (Nebraska), Saylor (Pennsylvania), Wharton (New York), Berry (South Dakota), Dawson (Utah), Westland (Washington), Pillion (New York), Hosmer (California), Rhodes (Arizona), Chenoweth (Colorado), Utt (California), Thomson (Wyoming), Weaver (Nebraska), and Collier (Illinois).

For the dam were Democratic Representatives Engle (California), Aspinall (Colorado), O'Brien (New York), Rogers (Texas), Pfost (Idaho), Edmondson (Oklahoma), Metcalf (Montana), Christopher (Missouri), Sisk (California), Udall (Arizona), Diggs (Michigan), Rutherford (Texas), Baring (Nevada), and Ullman (Oregon).

The House committee vote was a victory for the administration, which had been attempting to prevent a Hell's Canyon bill from reaching the floor. While passage of the bill would surely have encountered a presidential veto, the fact that a Democratic-controlled committee killed the bill rather than a Republican veto tends to blunt whatever political advantage proponents of the measure might hope to secure from defeat of the measure. The controversy will no doubt be discussed during next year's election campaign, but the issue has now lost most of its force.

MEANWHILE, an FPC examiner on July 23rd granted a 50-year license to the Pacific Northwest Power Company to build two dams on the Snake river in Idaho and Oregon. The dams—Mountain Sheep and Pleasant Valley—will have a combined installed capacity of 1,002,000 kilowatts initially, with an ultimate installation of 1,240,000 kilowatts. The estimated cost of the project ranges from about $167 million to $172 million.

The application was opposed by the National Hells Canyon Association and other public power groups which had also opposed the building of the three Hell's Canyon dams by the Idaho Power Company. They wanted a high federal dam at Nez Perce instead of the two proposed dams by Pacific Northwest. But FPC Examiner Marsh, who handed down the decision, stated that further development of this reach of the Snake river "should not be undertaken by the United States itself." The examiner's decision is subject to review by the FPC or repeal by the parties within thirty days.

The examiner threw cold water on Secretary of Interior Seaton's suggestion about a federal dam at Pleasant Valley. Secretary Seaton's move was viewed as an administration effort to offset any political gains, which might be forthcoming for the Democrats over the Hell's Canyon issue, by suggesting that the administration might support a high federal dam at Pleasant Valley. Pacific Northwest Power Company's proposal, Marsh said, is the best adapted to a comprehensive plan for development of the Snake at this point.

El Paso's Trust Suit

THE Justice Department has filed suit against El Paso Natural Gas to have it divest itself of its recently acquired control over Pacific Northwest Pipeline Corporation. Filed in the U. S. district court of Salt Lake City, the federal government's complaint charged that El Paso had

gained control over Pacific Northwest earlier this year through an exchange of stock. Because Pacific Northwest would continue as a separate entity, the transaction did not require the approval of the Federal Power Commission under the Natural Gas Act.

The complaint marks the first time the Justice Department has moved against a pipeline affiliation. Such transactions are normally subject to regulation by the FPC, but that agency was powerless to do anything about the El Paso-Pacific Northwest combine. The FPC has veto power over any pipeline company asset purchases, but it has no control over the person or company that buys stock in the pipeline company, unless there is a change in the operating procedures or a transfer of facilities. There were to be no such changes in El Paso's relations with Pacific Northwest.

El Paso has held more than 99 per cent of Pacific Northwest's stock since early this year, the complaint said. El Paso made the transaction by exchanging 14 shares of its class B common stock for each eight shares of Pacific Northwest common.

The Justice Department hinted that El Paso and Pacific Northwest purposely dealt in stock to avoid the FPC's jurisdiction. Commission officials had privately expressed concern over the possible anti-competitive effect of the merger. They also claimed most pipeline companies voluntarily submit their stock acquisition plans for FPC approval.

A TOP Justice Department official termed the complaint "an answer to critics who think the Eisenhower administration is opposed to regulation of the natural gas industry." The administration has endorsed a bill, recently approved by the House Commerce Committee, to ease the regulatory burden on independent natural gas producers—those not affiliated with an interstate pipeline.

Even if the FPC gives up some of its regulatory duties, this official said, the Justice Department can still attack anti-competitive influences in the gas industry. "Antitrust is the sole form of government action that can be used to obviate the need for government regulation," he asserted. "It can make free markets work, thus eliminating the need for public utility regulation."

El Paso officials claimed the affiliation would result in more efficient utilization of gas resources and more effective service to customers of both companies through economies of production. But the Justice Department's action attacked an alleged lessening of actual and potential competition through the affiliation.

The complaint specifically charged that the merger brings the only two major pipelines in the West under "common ownership and control"; results in the common ownership of the only two major pipelines buying gas in the vast San Juan field; gives El Paso "permanent access" to the Canadian gas sources that will be tapped starting this fall by Pacific Northwest and eliminates competition for Canadian gas; eliminates actual and potential competition between the two companies and the exploration, production, purchase, and sale of natural gas; eliminates Pacific Northwest as a competitive factor in the gas supply business in the West.

EL PASO, the nation's second largest pipeline company, had assets totaling $909.5 million and operating revenues of $221.5 million in 1956. Its 6,700 miles of pipeline carry gas from fields in west Texas and New Mexico to customers in the Southwest and California. The Justice Department said the company owns more gas reserves than any other pipeline, and

is the sixth largest gas producer. The complaint added that in 1955 El Paso furnished 60 per cent of California's gas needs, deriving three-fourths of its income from sales to companies in California.

Pacific Northwest is a relatively young transmission concern which went into business last year. It eventually hopes to import substantial amounts of gas from Canada.

Atomic Plant Legislation

A BILL authorizing greater government participation in peacetime atomic energy development has been approved by a subcommittee of the Joint Committee on Atomic Energy. In addition to funds for the Atomic Energy Commission's nuclear weapons program, the bill would authorize some $129,915,000 for AEC partnership agreements with industrial groups in reactor projects. Some of these funds have already been budgeted but were included in the present bill under a new law making all such projects subject to congressional appropriation.

The major new provisions of the bill are those sponsored by advocates of a stepped-up government reactor program. Supporters of last year's Gore-Holifield Bill, defeated in the House, had sought $400 million for government-operated large-scale reactors. The AEC asked for only $58 million.

The committee added to the AEC's recommendations these new items: (1) a $40 million reactor of the gas-cooled type to be built by the AEC at Arco, Idaho; (2) funds to provide for government design and construction of five power reactors for various co-operative groups; (3) authorization for the AEC to go ahead with a $15 million experimental reactor designed to "recycle" plutonium made in power reactors; (4) authorization of $3 million design and development study of a plutonium producing reactor, leaving it up to the AEC to decide whether the reactor would also produce power.

The bill authorizes no funds for the controversial reactor proposed by the Power Reactor Development Corporation (PRDC) for Monroe, Michigan, near Detroit. Instead, the committee authorized $1.5 million for research on the concept of the fast breeder reactor—the type proposed by PRDC.

Niagara Bill Progresses

THE outlook was more favorable last month for final congressional action at this session on a bill authorizing construction of the Niagara power project by the New York State Power Authority. Senate Majority Leader Johnson (Democrat, Texas) has again promised that the Senate will have a chance to act on the measure before adjournment, possibly immediately following the disposition of the civil rights bill.

The House passed and sent to the Senate a bill to authorize construction of the Niagara project by the New York Authority. Aside from a few skirmishes between government power and private power spokesmen, no major opposition to the measure developed. It is likely to be the same in the Senate when the bill comes up for debate.

Major criticism of the bill in the Senate has come from Democratic Senators Clark (Pennsylvania) and Lausche (Ohio), both of whom have expressed dissatisfaction with the amount of power from the Niagara project which would be allocated to Ohio and Pennsylvania. The Senate bill limits the amount to 10 per cent. The two Senators are hoping to work out a compromise that would give their states 20 per cent.

Telephone and Telegraph

Bell System Insurance Plan

A LIBERALIZED group insurance proposal for Bell system employees appears to have met most of the demands of the CIO-AFL Communications Workers of America. Although the union's 14-member executive board has not accepted the company's proposal, CWA President Joseph A. Beirne has indicated that the new plan offers a number of advantages over previous Bell system proposals.

The new plan would lead to the placing of well over a billion dollars worth of insurance for the 350,000 Bell system employees represented by CWA. Negotiations have been going on between CWA and a number of Bell system companies since November, 1956. Recently, these negotiations have been concentrated in the union's largest bargaining unit, the Southwestern Bell Telephone Company, with 55,000 workers represented.

The Bell system's latest plan calls for a contract between the company and the union. The former company proposal only contemplated union assent to an already developed plan. Under the proposed setup, there would be a grievance procedure to handle disputes over administrative details of the plan's operation. Finally, there would be a three-month grace period not included in the earlier proposal. This would protect the insurance of CWA members on strike.

Liberalization of the present Bell system pension and death benefit plan covering dependents is the heart of the new proposal. Under this change, dependents of an employee with one but less than two years' service would receive four months' wages; they receive nothing at the present time.

Employees with more than two years' service would have their death benefit improved along the line of service. After five years' service, for example, the dependency death benefit would be upped from seven months' pay to one year.

THE union also favors a look-at-the-books agreement previously refused by the company.

As originally proposed by the Bell system, a worker would be eligible to buy group life insurance in an amount equal to his annual salary, rounded out to the next $1,000 of insurance. The first $1,000 of insurance would be at no cost to the worker; he would pay 50 cents a month per thousand for the remainder. There would be no discretionary right to purchase a smaller amount of insurance. Pensioners would receive scaled-down

amounts of this life insurance at no cost.

The union's international convention, meeting in Kansas City in June, authorized the CWA executive board to conduct a referendum among the union's membership on a proposal for an all-union group life insurance program. This plan would be uniform in all its provisions and would require $1 per member per month dues increase to cover cost. The board has not yet ordered the referendum.

The union's plan would give each CWA member $1,000 worth of insurance the first year, increased in $1,000 amounts each year until the fourth year when it would reach $4,000 and remain there. Pensioners would receive, at no cost, $500 of insurance the first year, and $1,000 thereafter.

CWA's tentatively favorable reaction to the company's plan is viewed as likely to lead finally to an agreement on the proposal. Other unions in the Bell system, both independent and the International Brotherhood of Electrical Workers, accepted the company's previous proposal some time ago.

Chicago Phone Exhibit

COLORFUL telephones, attractive girls, and a pretty good idea of what's new in telephone manufacturing are featured by Western Electric in its Chicagoland Fair exhibit. In its 4,000 square feet of display space the company has accomplished a threefold purpose—to show how employees work in factories, to display new projected projects for the future, and to recruit a labor force. Hanging above the exhibit are some 2,000 phone handsets, representing the different variety of colors in which telephones are available.

Visitors to the fair actually see production of telephone parts. Trucks from the company's Hawthorne plant in Cicero, Illinois, make daily trips to the Navy pier, picking up parts assembled at the fair. Some 2,000 telephone relays are assembled by women operators each day. Spectators see how the relays, resistors, and condensers are wired into mounting plates. Also produced at the fair each day are one or two crossbar frame wiring units used in dial telephone exchange services.

Throughout the display are animated screen exhibits showing operations of Western Electric products. Visitors watch the screen and listen to recorded messages describe the operation. One such display explains the entire process of dial telephoning.

Another large screen shows Nike, the Army's guided missile system, in action. On the animated screen spectators watch the rocket leave the ground to seek out an enemy plane, make contact with the aircraft, and finally destroy it.

If you pick up a telephone at another exhibit you can hear a recording of the first telephone call made over the new transatlantic cable between Newfoundland and Scotland. In its "new horizon" display, the company shows how the Bell solar battery works. The battery is the first man-made device for converting the sun's energy into usable amounts of electricity.

Deaf—Blind Telephone

TWO Dutch scientists have developed a system through which persons who are deaf and blind can "hear" over the telephone. The novel electrical system uses a principle similar to that used in the huge electronic "brain" machines, a machine with a typewriter keyboard, a "feeling box" that employs the Braille reading system and a regular telephone circuit. A demonstration showed how deaf-blind persons can communicate with the rest of

the world at a normal rate of 100 or more words a minute.

IN the demonstration, a sender at the New York Telephone Company tapped out a message on a machine similar to a regular typewriter. His taps were "modulated" or translated into a series of electronic circuits that went out over the telephone wire. At the Industrial Home for the Blind, the signals were "demodulated" into the "feeling box." This gadget, about the size of a shoe box, contains a hole, over which the deaf-blind receiver places his hand. Six small pins tap out the message in Braille against his hand.

The system was developed by two Dutch mathematicians, Doctors Gerritt van der Mey and William L. van der Poel, at the laboratories of the Netherlands Telephone & Telegraph Company at The Hague. Actually, the scientists devised the operation so that Dr. van der Mey, who is deaf and blind, could communicate from his home to Dr. van der Poel at the company's offices, a distance of 60 miles. The system can be used, however, over a telephone circuit of any length.

The two men demonstrated the system as part of a series of meetings conducted by the World Council for the Welfare of the Blind and the Committee on Services for Deaf—Blind. The meetings are aimed at developing methods of communications between persons afflicted with deafness or blindness or both.

Subscription TV

As recently as July 9th the Zenith Radio Corporation of Chicago told the Federal Communications Commission that it would rather have its proposed subscription television rejected outright than go through "further endless hearings" on the subject. Zenith was motivated chiefly by the fact that closed-circuit television—television wired into individual homes—is already in operation in a few test areas. The Zenith company is a broadcast system and as such it comes under FCC regulation. That is not the case with closed-circuit or wire television. The FCC has nothing to do with it.

Free of heavy pressure from the hand of the FCC, the closed-circuit television promoters have been busily making hay under what seems to be a shining sun. A significant and perhaps historical event took place last month when the Los Angeles city council voted, 11 to 2, approval of the franchise application of Skiatron TV, Inc., for a city-wide closed-circuit television system.

SKIATRON is reportedly linked with the Brooklyn Dodgers in an agreement to televise their games. Indeed, the Dodgers' decision to move to Los Angeles presumably hinges on the possibility that their games will be seen—and paid for—by televiewers, in addition to in-the-flesh customers.

But the city council's action does not eliminate other and competing systems. The council merely approved a franchise application; when the franchise is prepared it must be subject to open bidding. Fox West Coast Theaters and the International Telemeter Corporation, another closed-circuit system, have filed a joint application for a second franchise and have announced their intention of bidding.

Skiatron has offered to give the city 2 per cent of its gross revenues. Other concerns, when the time comes, may offer more.

Financial News and Comment

By OWEN ELY

What Is the Best Equity Ratio?

In a recent article in the *Analysts Journal* (May, 1957, pages 39-44), C. A. Hoskin, after a detailed statistical analysis, concluded that "there is no optimum capitalization ratio for all public utility companies. It would appear that, within certain rather indefinite limits, one company may report just as good results with a so-called 'low' ratio of common stock and surplus to total capitalization as another company with a substantially 'stronger' ratio. . . . Many other factors, including current earnings and dividends, long-term earnings trend, the rate of growth of population in the territory serviced, the rate structure prescribed by state commissions or other regulatory bodies, and the need of capital for expansion of facilities, plus other similar factors, exercise more influence upon the quality of a public utility company's securities than does its capital structure. Perhaps we have been devoting too much attention to capitalization ratios in the past and not enough to other more important determining factors in our analyses of public utilities securities."

Hugh Pastoriza, well-known utility analyst of Coffin & Burr, has some interesting ideas on common stock equity. He points out that the utility industry originally started out (in New England at least) on an all-common stock basis, but during the 1920's swung over to the other extreme, in the effort to gain very high leverage. The latter objective was more frequently effected by building up a series of holding companies, each with its own senior securities, than by an extremely low equity ratio for the operating company itself.

After the debacle of 1929-34 the industry moved to put its house in order—vigorously assisted by the SEC. In addition to sweeping away the false superstructure of unwarranted holding companies, the commission ordered the equity ratios of the operating subsidiaries "solidified" by drastic write-offs of intangibles, and equities were painfully built up again by holding company cash contributions and later by extra emissions of common stock. While some companies were satisfied to achieve a 25 per cent equity ratio,

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as prescribed by the ABC restrictions, the majority of the companies have worked toward 30-35 per cent as their goal.

In divesting the holding companies the SEC was confronted in many instances with companies where common equity was lower than they thought desirable. One method to foster the build-up of equity was by restricting dividends through the so-called ABC formula. This held dividends down to 50 per cent of earnings so long as common equity was below 20 per cent, and to 75 per cent so long as that equity was below 25 per cent. Companies with equities above 25 per cent were not limited. This restriction was put into indentures, bylaws, and preferred stock agreements. Thus today practically all the companies which emerged from holding company systems, and many others which have issued preferred stocks, are restricted by this rule.

No utility executive wants his common dividend policy disrupted by a sudden dip in earnings, hence nearly all the companies have kept well above this limit. None of the electric utilities appear to have a ratio of less than 25 per cent. Some of the pipelines have lower ratios, but these are usually balanced by convertible issues which are, of course, potential equity.

DURING the postwar period there have been two distinct trends in changes of equity ratios. Many former holding company subsidiaries, due to heavy write-offs ordered by the SEC, started their independent careers with low equity ratios —as for example West Penn Electric and Pennsylvania Power & Light; others were on the border line of respectability, around 1925-27. During the postwar years most of these companies issued more common stock than was necessary merely for growth, in order to raise their equity ratios to "a respectable level," improve their bond ratings, and reduce the cost of senior financing. In so doing they decreased the earnings leverage of the common stock, so that share earnings did not increase as fast as they otherwise would have done, but as this was generally a favorable earnings period this result was disregarded.

On the other hand, some of the very large old-line utilities, such as Consolidated Edison, Boston Edison, and others which originally had high equity ratios, have allowed them to drift lower, thus eliminating some equity financing. Thus, Boston Edison's ratio dropped from 69 per cent to 50 per cent, Consolidated Edison's from 52 per cent in 1944 to less than 40 per cent, Commonwealth Edison's from 60 per cent to 44 per cent (with a further decline likely), etc. The two trends have virtually offset each other, as indicated by the remarkably stable average for all class A and B privately owned electric utilities which has remained between 36.9 per cent and 38.7 per cent during the postwar decade.

WE have noted that raising the equity ratio decreases the common stock leverage and thus retards the increase in share earnings. To what extent does raising the equity ratio increase the protection for the common stock dividend, and does the latter give the stock greater investment attraction? Of course the substitution of equity financing for senior financing increases the proportion of revenue brought down for the common stock; but on the other hand the number of shares is increased which may cancel out the advantage, at least in part. The most practical method of protecting the common stock dividend is perhaps merely to have a low percentage pay-out.

However, dividend pay-out seems to have been fairly well standardized around the 72 per cent level, which would afford a direct reserve margin of about 40 per cent,

and investors do not seem to pay a great deal of attention to dividend pay-out as a measure of dividend safety. In a broad way, the rating on the company's bonds and the utility companies' general credit standing seems to be taken as a guide to the quality of the common stock.

Perhaps the difficulty is that investors have been spoiled by the fine postwar earnings record of the utilities. There have been extremely few cases of dividend cuts and these have usually been restored. Many utilities' dividend rates have been raised several times, in some cases almost every year. Thus, attention has been diverted from the question "How safe is my dividend?" to the query "How soon will I get a dividend increase?" Only in the case of American Telephone and Telegraph, perhaps, has a reputation for absolute dividend safety become a shibboleth with investors. However, in any real depression doubtless the investing public might again seek reassurances regarding the safety of other utility dividends.

THERE is another way of measuring coverage of common stock dividends than the simple method of using dividend pay-out. This would be to use the same method employed in testing the investment merit of a utility preferred stock, by calculating the over-all coverage provided by gross income for the total amount of interest charges, preferred dividends, and common dividends. While the safety of the preferred dividend is usually measured on an over-all basis, including fixed charges with it, apparently this practice has not been widely employed (if at all) with reference to the common dividend.

For all the class A privately owned electric utilities in the United States in the year 1956, various coverage figures may be computed as shown below.

DURING 1930-34 revenues of all investor-owned electric utilities (as reported by the EEI) decreased about 10 per cent while gross corporate income dropped 22 per cent; and in 1938 revenue dipped about 1 per cent and gross corporate income over 2 per cent, about the same relationship. But federal income tax rates are now much higher and thus serve as more of a stabilizer for gross income. A decline of 10 per cent in gross today would perhaps mean a dip of only 15 per cent in gross income. Last year this would have meant a decline in the balance for charges and all dividends of about $272 million so that some of the $316 million balance for surplus would still remain. Thus if, as Pastoriza suggests, utility executives may still

	Amount In Millions	*Coverage (No. Times) Before Income Taxes*	*After Income Taxes*
Gross Income before Income Taxes	$2,848		
Gross Income after Income Taxes	1,812		
Fixed Charges	483	5.90	3.75
Balance after Charges	1,329		
Preferred Dividends	161		8.25
Fixed Charges and Preferred Dividends ...	644		2.81
Balance after Preferred Dividends	1,168		
Common Dividends	852*		1.37
Fixed Charges, Pfd. and Common Div.	1,496		1.21

*Seventy-three per cent pay-out.

have in mind the "big depression" as representing about the worst that could happen to them from a decline in sales, the utilities seem to be reasonably safe. (It must be remembered that this is an *average* result and that there are always individual exceptions.)

Of course rising money rates introduce a new factor. In the 1920's the utilities had to cope with very high money rates but, on the other hand, regulation was very liberal and recognized the high cost of money, for the most part. In the 1930's and early 1940's, on the other hand, regulation tightened up considerably but money rates declined to extremely low levels, one factor offsetting the other. Now interest rates are moving up sharply and it remains to be seen whether regulatory agencies will grant correspondingly higher rates of return without too much lag in doing so. While higher money rates will have only a very gradual effect in raising fixed charges, nevertheless the increase will tend to reduce coverage of common dividends, other factors being equal. What will utility executives do to offset this, and to maintain safety of dividends—or maintain continued increases in the dividend rate? There is some current indication that, strange as it may seem, they may increase the debt ratio and allow the equity ratio to retreat a little, the major reason being the big tax advantage of fixed charges *versus* dividends. In this connection Pastoriza comments that "25 per cent common equity is about as low as a company can go and still keep a coverage of 2½ times. A Pennsylvania or Ohio company, which is allowed to earn 7 per cent on net book value of capital might go as low as 20 per cent."

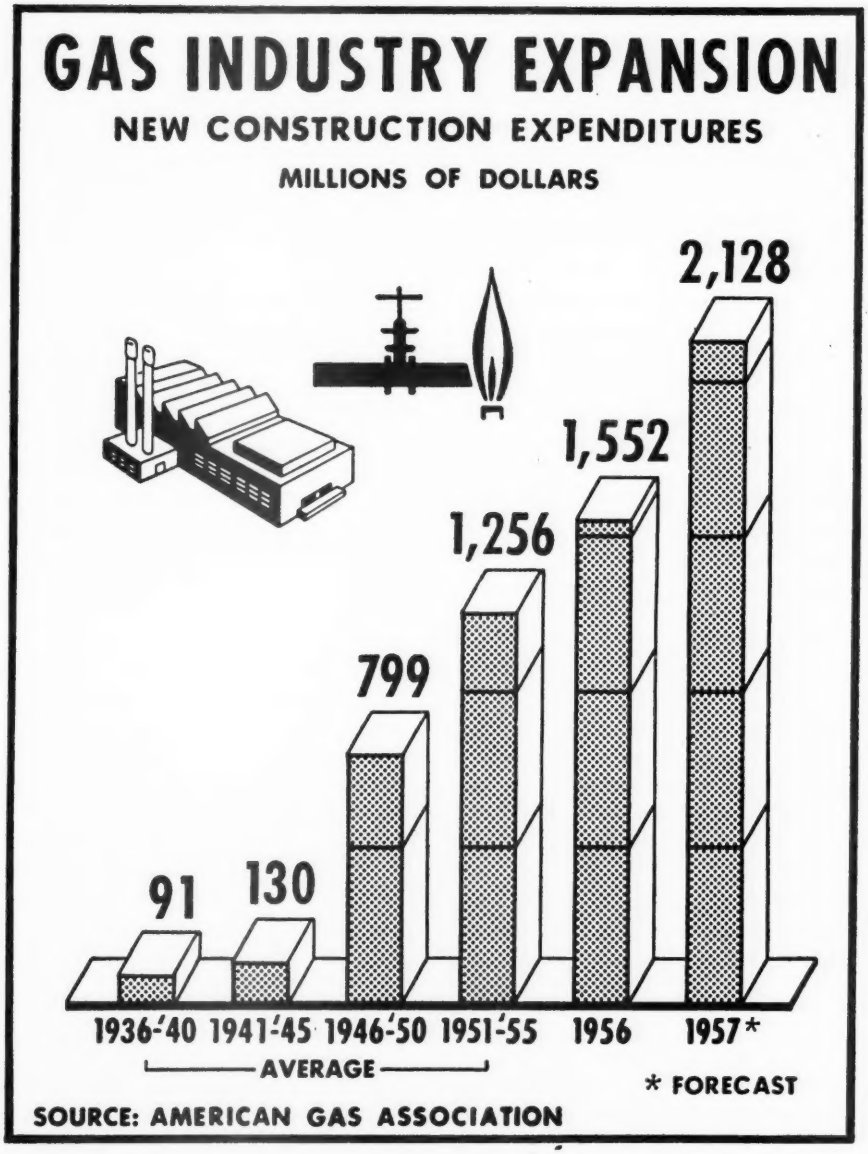
It seems unlikely, however, that any electric utility would want to return to a 20 per cent equity ratio.

It would doubtless require a mathematical genius or an IBM electronic brain to calculate the effects of all the variables which enter into the picture. Thus in addition to the factors discussed above we might also consider (1) inadequacy of present depreciation reserves to cover plant replacements on an inflation basis, (2) the effects of interest-free capital supplied by deferred taxes resulting from accelerated amortization and accelerated depreciation, (3) the potential obsolescence of plant due to scientific progress with atomic research, etc. About all the utility executive can do is to regard such factors as plus or minus items in the net result, without trying to weigh them.

Stocks of New Canadian Gas Companies Highly Popular

Financing of the Westcoast Pipe Line and of Trans-Canada Gas Pipe Lines have proved so successful (in contrast with the rough sledding which the big pipeline encountered before it "jelled" politically) that other new companies formed to distribute Trans-Canada's gas have also offered their securities to the public in rapid succession. These included Alberta Gas Trunk Line, Northern Ontario Natural Gas, Quebec Natural Gas, Intermountain Gas, and Lakeland Natural Gas.

The financing of practically all these companies has followed the pattern already established by some of the American pipelines. First mortgage bonds are sold to institutions, some founders' shares are issued, and then a substantial issue of units is offered to the public. Each unit consists of a debenture with one or more shares of common stock, the stock not being separable from the debenture until a prescribed date.



THE gas utility and pipeline industry is expanding this year at the fastest pace in its history with construction expenditures of more than two billion dollars. This is 37 per cent higher than last year and more than triple the annual average for the previous 20 years. The industry is adding about a million customers a year and currently serves more than 30 million customers through utility gas lines.

Most if not all of these offerings were "hot issues" and went to sizable price premiums. Possibly the best issue in this respect was the Alberta Gas Trunk Line common stock, which rose from the offering price of $5.25 in February to a bid of $21 in July. Earnings projections for these new companies have in most cases been prepared by engineers employed by the underwriters. But these figures are usually not published in the prospectus and are probably treated as semiconfidential. Kippen & Company, investment bankers of Toronto, have prepared detailed estimates and projections of their own which seem to be much more optimistic than the engineers' figures, where comparison is possible. On the basis of the meager available data, some of these new gas stocks have seemed to be selling at inflated values compared with American pipeline stocks.

In addition to meeting the demands of Trans-Canada for natural gas from the fields in western Canada, to supply gas to old and new gas distributors in Ontario and other sections of Canada, the Alberta fields will be called on to supply gas to Westcoast Transmission and its U. S. partner, Pacific Northwest Pipeline (controlled by El Paso Natural Gas). Moreover, Tennessee Gas Transmission has proposed to build a new line, Midwestern Gas Transmission, from Tennessee to the Canadian boundary between Minnesota and Manitoba. This would tap the Trans-Canada line to bring gas to the U. S. Middle West where there is still a sizable shortage for house-heating customers. (The latter plan is in conflict, however, with expansion plans of Peoples Gas and possibly those of Northern Natural Gas.)

El Paso Natural Gas early this year acquired over 99 per cent of the stock of Pacific Northwest Pipeline through an exchange for its own class B shares. El Paso now supplies gas to practically the whole Pacific coast, including the big utilities in California. Recently Pacific Gas and Electric (which gets much of its gas from El Paso) announced that it also planned to build a line to Canada in order to assure itself and other California utilities of an adequate supply. Despite this announcement, the federal government a few days later attacked El Paso as having a potential monopoly in its area and ordered it to divest itself of its interest in the Northwest Pipeline. In the past, utility "monopolies" have been allowed and even encouraged because competition is not warranted in this field and because they are regulated by public agencies. A Justice Department official has been quoted in the newspapers as saying that "the suit would be an answer to critics who think the Eisenhower administration is opposed to regulation of the natural gas industry."

CURRENT YIELD YARDSTICKS

	July 19, 1957	*1957 Range* High	Low	*1956 Range* High	Low	*1955 Range* High	Low
Utility Bonds—Aaa	4.05%	4.05—	3.70%	3.83—	3.08%	3.19—	2.93%
Aa	4.09	4.09—	3.78	3.87—	3.11	3.26—	2.99
A	4.22	4.22—	3.92	3.92—	3.27	3.36—	3.12
Baa	4.42	4.42—	4.23	4.23—	3.49	3.51—	3.37
Utility Pfd. Stocks—High-grade	4.97	4.97—	4.37	4.68—	3.92	3.98—	3.89
—Medium-grade	5.09	5.10—	4.76	4.84—	4.25	4.32—	4.19
24 Electric Utility Common Stocks	4.86	4.96—	4.67	4.87—	4.45	4.64—	4.32
30 Gas Utility Common Stocks	4.52	4.74—	4.34	4.83—	4.30	4.70—	4.29

Source of data, Moody's Service.

Thus the move seems to be tied in politically with the natural gas bill.

CERTAINLY the timing of the move by the Department of Justice seems illogical, coming shortly after the announcement that Pacific Gas and Electric would build a competing line. Even though the three-way competition for Alberta gas reserves is still in an early stage, it is reported that the contest has already forced the field price from 10 cents up to 12-15 cents per Mcf—which will hardly prove of future benefit to California consumers.

The *Financial Post* of Canada in its issue of July 13th ran some interesting stories under the heading "Can Our Gas Meet Giant New Plans" and "Here's Story of Giant Gas Line Plans." The newspaper questions whether Canada has enough gas to permit the export of another 400 million cubic feet to Pacific Gas and Electric's proposed line in addition to the increased demands of El Paso (through Westcoast Transmission and Pacific Northwest). Representatives of both companies have been contacting major gas producers, and also sounding out opinion in the new government at Ottawa. Any proposal to export gas must jump three government hurdles, it was pointed out: the Alberta provincial government, the new conservative dominion government at Ottawa, which will decide the matter of exports, and the FPC in the United States.

Alberta's natural gas reserves have been rising (with increased exploration) at the rate of almost 2 trillion cubic feet a year and are now estimated somewhere around 20 trillion cubic feet, according to the *Post*. However, much expensive drilling will be required to prove these reserves.

DATA ON ELECTRIC UTILITY STOCKS

Annual Rev. (Mill.)			*7/24/57 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earnings*	*% Increase*	*Aver. Incr. In Sh. Earns. 1951-56*	*Price-Earn. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
$268	S	American G. & E.	35	$1.44m	4.1%	$2.10Je	2%	9%	16.7	69%	34%
46	O	Arizona Pub. Ser.	26	1.12	4.3	1.78Ma	25	13	14.6	63	31
11	O	Arkansas Mo. Power	17	1.00c	5.9	1.00Ma	6	10	17.0	100	31
32	S	Atlantic City Elec.	30	1.30	4.3	1.67My	10	10	18.0	78	33
132	S	Baltimore G. & E.	34	1.80	5.3	2.45Ma	10	8	13.9	73	45
7	O	Bangor Hydro-Elec.	31	1.90	6.1	2.65Je	D3	8	11.7	72	35
5	O	Black Hills P. & L.	23	1.40	6.1	2.25Ap	1	1	10.2	62	27
99	S	Boston Edison	48	2.80	5.8	3.45De	1	2	13.9	81	50
21	A	Calif. Elec. Power	14	.76	5.4	.98Ma	5	16	14.3	78	36
21	O	Calif. Oreg. Power	31	1.60	5.2	2.30De	9	5	13.5	70	33
8	O	Calif. Pac. Util.	29	1.60	5.5	2.34Ma	5	6	12.4	68	30
63	S	Carolina P. & L.	24	1.20	5.0	1.72Je	1	2	14.0	70	42
28	S	Cent. Hudson G. & E.	16	.80	5.0	1.00Je	D9	10	16.0	80	34
21	O	Cent. Ill. E. & G.	31	1.60	5.2	2.34My	1	11	13.2	68	33
35	S	Cent. Ill. Light	49	2.60	5.3	3.90Je	D8	8	12.6	67	42
51	S	Cent. Ill. P. S.	29	1.60	5.5	2.32Je	D5	12	12.5	69	38
13	O	Cent. Louisiana Elec.	36	1.60	4.4	2.01Je	D4	8	17.9	80	32
35	O	Cent. Maine Power	21	1.40	6.7	1.73Je	4	4	12.1	80	34
128	S	Cent. & South West	40	1.60	4.0	2.22Ma	5	15	18.0	72	35
12	O	Cent. Vermont P. S.	17	1.00	5.9	1.00Je	D18	1	17.0	80	31
114	S	Cincinnati G. & E.	26	1.20f	4.6	2.00Ma	—	7	13.0	60	43
7	O	Citizens Util. "B"	15	.90a	6.0a	1.15Ma	7	10	13.0	78	42
111	S	Cleve. Elec. Illum.	38	1.60	4.2	2.55Ma	D4	8	14.9	63	49
4	O	Colo. Cent. Power	25	1.20	4.8	1.82Ma	14	8	13.7	66	33
48	S	Columbus & S. O. E.	28	1.60	5.7	2.30Ma	4	5	12.2	70	36
360	S	Commonwealth Ed.	39	2.00	5.1	2.78Ma	4	8	14.0	72	47
11	A	Community Pub. Serv.	25	1.20	4.8	1.87Ma	10	15	13.4	64	52
2	O	Concord Elec.	44	2.40	5.5	2.67De	D1	1	16.5	90	64

Annual Rev. (Mill.)		(Continued)	7/24/57 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1951-56	Price-Earn. Ratio	Div. Payout	Approx. Common Stock Equity
71	O	Conn. Lt. & Pr.	18	1.00	5.6	1.12Je	D9	7	16.1	88	39
23	O	Connecticut Power	42	2.25	5.4	2.84Ma	D2	4	14.8	79	41
522	S	Consol. Edison	43	2.40	5.6	3.20Je	1	8	13.4	75	39
208	S	Consumers Power	45	2.40	5.3	3.17My	D4	6	14.1	76	43
74	S	Dayton P. & L.	47	2.40	5.1	3.27Ma	D7	8	14.4	73	38
39	S	Delaware P. & L.	48	1.80	3.8	2.64Ma	9	10	18.2	68	35
237	S	Detroit Edison	41	2.00	4.9	2.51Je	10	8	16.3	80	46
130	A	Duke Power	31	1.20	3.9	1.90De	5	20	16.3	63	52
95	S	Duquesne Light	35	2.00	5.7	2.42Ma	D1	4	14.5	83	34
31	O	East. Util. Assoc.	33	2.20	6.7	2.28My	D13	0	14.5	97	34
2	O	Edison Sault Elec.	16	.80	5.0	1.09Ma	D10	13	14.7	73	42
12	O	El Paso Elec.	23	1.00	4.3	1.35My	13	8	17.0	74	41
12	S	Empire Dist. Elec.	19	1.20	6.3	1.63Ma	10	3	11.7	74	31
5	O	Fitchburg G. & E.	49	3.00	6.1	3.65De	4	3	13.4	82	45
49	S	Florida Power Corp.	56	1.80	3.2	2.66Je	5	19	21.1	68	32
110	S	Florida P. & L.	50	1.28	2.6	2.80Je	25	25	17.9	46	38
189	S	General Pub. Util.	36	2.00	5.6	2.93Ma	2	12	12.3	68	40
6	O	Green Mt. Power	15	1.00	6.7	1.22Ma	D1	7	12.3	82	36
56	S	Gulf States Util.	36	1.60	4.4	2.28My	5	14	15.8	70	32
22	A	Hartford E. L.	58	3.00	5.2	4.08Ma	D5	12	14.2	74	49
5	O	Haverhill Elec.	38	2.35	6.2	2.67De	2	—	14.2	88	100
21	O	Hawaiian Elec.	45	2.30	5.2	3.24Je	D4	—	13.9	71	36
78	S	Houston L. & P.	58	1.60k	2.8	2.58Je	D4	20	22.5	62	46
8	O	Housatonic P. S.	21	1.40	6.7	1.43De	1	0	14.7	98	53
27	S	Idaho Power	37	1.40	3.8	2.19Ma	12	7	17.0	64	36
82	S	Illinois Power	29	1.50	5.2	1.88My	—	6	15.4	80	35
43	S	Indianapolis P. & L.	31	1.50	4.8	2.06My	NC	5	15.0	73	39
20	S	Interstate Power	13	.80	6.2	1.04Ma	—	3	12.5	77	30
33	O	Iowa Elec. L. & P.	29	1.50	5.2	1.98Je	D13	10	14.6	76	31
39	S	Iowa-Ill. G. & E.	30	1.80	6.0	2.42Ma	1	3	12.4	75	41
37	S	Iowa Power & Lt.	27	1.60	5.9	2.05My	NC	2	13.2	78	35
32	O	Iowa Pub. Serv.	15	.80	5.3	1.06Je	D10	5	14.1	75	35
13	O	Iowa South. Util.	21	1.28	6.0	1.72Je	D4	8	12.2	74	37
56	S	Kansas City P. & L.	36	2.00	5.6	2.84Je	3	8	12.7	70	35
30	S	Kansas G. & E.	28	1.32	4.7	2.28Je	16	12	12.3	58	29
45	S	Kansas Pr. & Lt.	25	1.30	5.2	2.09Je	2	9	12.0	62	31
37	O	Kentucky Util.	26	1.28	4.9	2.05Ma	1	9	12.7	62	34
7	O	Lake Superior D. P.	23	1.20	5.2	1.65Ma	2	6	13.9	73	38
6	O	Lawrence Elec.	26	1.75	6.7	1.46De	D22	D	17.8	83	63
98	S	Long Island Ltg.	22	1.20	5.5	1.45Ma	D5	6	15.2	83	32
52	S	Louisville G. & E.	27	1.10	4.1	1.88De	4	4	14.4	59	40
8	O	Lowell Elec. Lt.	53	3.00	5.7	3.37De	D8	D	15.7	89	58
9	O	Lynn G. & E.	32	1.60	5.0	2.10De	3	8	15.2	76	77
9	O	Madison G. & E.	43	1.80	4.2	4.08Ma	NC	11	10.5	44	50
4	A	Maine Pub. Serv.	16½	1.08	6.5	1.35Ap	31	3	12.2	80	33
5	O	Michigan G. & E.	46	1.60b	6.5b	4.05Ma	7	14	11.4	40	37
159	S	Middle South Util.	36	1.60	4.4	2.38Je	20	4	15.1	66	34
28	S	Minnesota P. & L.	27	1.40	5.2	2.22Je	—	6	12.2	63	36
2	O	Miss. Valley P. S.	30	1.40	4.7	2.13My	D16	3	14.1	66	31
12	A	Missouri Pub. Serv.	13	.72h	5.5	.95Je	D4	20	13.7	76	33
6	O	Missouri Util.	23	1.36	5.9	1.87Je	D1	2	12.3	73	32
39	S	Montana Power	49	2.00	4.1	3.60Je	7	6	13.6	56	37
142	S	New England Elec.	16	1.00	6.3	1.27Ma	—	0	12.6	79	34
44	O	New England G. & E.	17	1.05	6.2	1.41My	D7	5	12.1	74	42
45	O	New Orleans P. S.	45	2.25	5.0	2.62My	4	0	17.2	86	38
2	O	Newport Elec.	17	1.00	5.9	1.40Ja	16	4	12.1	71	30
83	S	N. Y. State E. & G.	35	2.00	5.7	3.02Je	—	8	11.6	66	39
244	S	Niagara Mohawk Pr.	30	1.80	6.0	2.07Ma	D8	4	14.5	87	33
81	O	Northern Ind. P. S.	39	1.92	4.9	2.99Je	5	7	13.0	64	35
139	S	Nor. States Power	17	.90	5.3	1.19Ap	NC	8	14.3	76	34
9	O	Northwestern P. S.	16	1.00	6.3	1.26Ma	D12	3	12.7	80	26
129	S	Ohio Edison	50	2.64	5.3	3.56Je	D5	9	14.0	74	44
48	S	Oklahoma G. & E.	42	1.80	4.3	2.43Je	7	9	17.3	74	35
15	O	Otter Tail Pr.	26	1.60	6.2	2.20Ma	—	7	11.8	73	38
471	S	Pacific G. & E.	48	2.40	5.0	3.36Ma	D1	13	14.3	71	35

Annual Rev. (Mill.)		(Continued)	7/24/57 Price About	Dividend Rate	Approx. Yield	Recent Share Earnings	% Increase	Aver. Incr. In Sh. Earns. 1951-56	Price-Earn. Ratio	Div. Payout	Approx. Common Stock Equity
48	O	Pacific P. & L.	29	1.60	5.5	2.15Ap	NC	8	13.5	74	29
129	S	Penn Power & Lt.	44	2.40	5.5	3.31My	5	11	13.3	73	28
225	S	Phila. Elec.	37	2.00	5.4	2.47Je	D2	6	15.0	81	43
35	O	Portland Gen. Elec.	24	1.20	5.0	1.64Je	D3	6	14.6	73	36
64	S	Potomac Elec. Pr.	21	1.10	5.2	1.58My	2	8	13.3	70	39
83	S	Pub. Serv. of Colo.	42	1.80i	4.3	2.68Ma	8	8	16.0	67	39
300	S	Pub. Serv. E. & G.	30	1.80	6.0	2.35*Je	D5	—	12.8	77	38
75	S	Pub. Serv. of Ind.	35	2.00	5.7	2.60My	6	4	13.5	77	36
29	O	Pub. Serv. of N. H.	17	1.00	5.9	1.42Je	12	13	12.0	70	32
12	O	Pub. Serv. of N. M.	16	.80	5.0	1.18Ma	15	7	13.6	68	37
25	S	Puget Sound P. & L.	27	1.36	5.0	1.74My	10	10	15.5	78	61
58	S	Rochester G. & E.	27	1.60	5.9	2.24Ma	5	10	12.1	71	35
19	O	Rockland L. & P.	19	.80	4.2	1.05De	9	11	18.1	76	30
8	S	St. Joseph L. & P.	24	1.40	5.8	1.92Ma	12	7	12.5	73	40
51	S	San Diego G. & E.	20	.96	4.8	1.42My	D3	6	14.1	68	40
8	O	Savannah E. P.	20	1.00	5.0	1.36Ma	12	4	14.7	74	30
9	O	Sierra Pacific Pr.	23	1.20	5.2	1.96My	26	14	11.7	61	27
195	S	So. Calif. Edison	48	2.40	5.0	3.20Ma	D5	3	15.0	75	37
43	S	So. Carolina E. & G.	21	1.10	5.2	1.40My	—	20	15.0	79	36
7	O	Southern Colo. Pr.	14	.70	5.0	1.32My	10	9	10.6	53	43
228	S	Southern Co.	25	1.10	4.4	1.53Je	5	10	16.3	72	35
16	S	So. Indiana G. & E.	30	1.60	5.3	2.06Ma	6	5	14.6	78	35
7	O	So. Nevada Power	18	1.00	5.6	1.55My	5	15	11.6	65	34
1	O	Southern Utah Power	17	1.00	5.9	1.50My	36	1	11.3	67	39
3	O	Southwestern E. S.	20	1.16	5.8	1.64My	D1	4	12.2	71	27
39	S	Southwestern P. S.	31	1.40	4.5	1.76My	15	4	17.6	80	30
26	A	Tampa Elec.	33	1.20	3.6	1.67My	11	14	19.8	72	36
146	S	Texas Utilities	45	1.44	3.2	2.43Ap	18	15	18.5	59	38
40	S	Toledo Edison	13½	.70	5.2	1.01Je	D3	5	13.4	69	29
14	O	Tucson G. E. L. & P.	33	1.40	4.2	2.11Ma	34	14	15.6	66	35
122	S	Union Elec. of Mo.	27	1.52	5.6	1.88Ma	9	11	14.4	81	36
33	O	United Illuminating	24	1.30	5.4	1.32My	D16	7	18.2	98	48
5	O	Upper Peninsula Pr.	28	1.60	5.7	2.00Ma	D8	10	14.0	80	37
41	S	Utah Power & Lt.	26	1.20	4.6	1.74Ap	4	9	14.9	69	43
118	S	Virginia E. & P.	23	1.00	4.3	1.44Ma	9	14	16.0	69	34
26	S	Wash. Water Power	36	1.88	5.2	2.39Je	9	14	15.1	79	41
132	S	West Penn Elec.	27	1.50	5.6	2.07Ma	D1	9	13.0	72	33
64	O	West Penn Power	47	2.40	5.1	3.12Ma	D5	13	15.1	77	33
11	O	Western Lt. & Tel.	33	2.00	6.1	2.98Ma	5	10	11.1	67	33
26	O	Western Mass Cos.	38	2.20	5.8	3.12Je	D4	10	12.2	71	56
105	S	Wisc. El. Pr. (Cons.)	31	1.60	5.2	2.41Ma	D1	5	12.9	67	40
40	O	Wisconsin P. & L.	27	1.28	4.7	1.94Je	9	4	13.9	66	36
37	S	Wisconsin P. S.	22	1.20	5.5	1.83Ma	4	6	12.0	66	36
		Averages			5.2%			9%	14.3	72%	
		Foreign Companies									
203	S	Amer. & Foreign Pr.	16	$1.00	6.3%	$1.99Ma	D8	2%	8.0	50%	47%
149	A	Brazilian Trac.	10	.75n	7.5	2.19De	86	D	4.6	34	73
68	A	British Columbia Pr.	54	1.20	2.2	2.34De	14	27	23.1	51	27
17	A	Gatineau Power	32	1.40	4.4	2.28De	15	15	14.0	61	31
35	O	Mexican L. & P.	15	—	—	1.67De	D7	62	9.0	—	46
13	A	Quebec Power	29	1.20	4.1	1.99De	15	14	14.6	60	52
54	A	Shawinigan Wtr. & Pr.	93	1.80	1.9	4.25De	22	26	21.9	42	40

A—American Stock Exchange. B—Boston Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. *Based on average number of shares. **Calendar year 1955. a—Estimated annual rate. The "A" stock received stock dividends. b—Also 3 per cent stock dividend December 31, 1956, which is included in the yield. c—Also 2 per cent stock dividend January 10, 1956. f—Also 5 per cent stock dividend August 15, 1956. g—Cash dividends of $2.50 in 1956 included 30 cents extra; 10 per cent stock dividend also paid April 30, 1956. h—Also stock dividend of one share for each 200 shares held September 12, 1956. i—Also 10 per cent stock dividend November 16, 1956. j—Also 10 per cent stock dividend August 31, 1956. k—Also 5 per cent stock dividend December 17, 1956. m—Also 2 per cent stock dividend January 10, 1956; 3-for-2 split June 15, 1956. n—Also 5 per cent stock dividend December 28, 1956.

What Others Think

The Risks of a Regulated Industry *versus* Competitive Industries

It is ironical to read on the front page of the morning paper in one column that steel prices are being increased $6 a ton while in another column Florida Power & Light Company has agreed to reduce the price of electricity under pressure from the railroad and public utilities commission, yet steel is a major material used in power plants for boilers, turbines, piping, and structures. Since January 1, 1946, boilers have gone up 182 per cent and turbines 174 per cent. By contrast, Florida Power & Light Company received 6 per cent less per unit of electricity sold in 1956 than it received in 1945 and 18 per cent less than prewar year of 1941.

What is the difference between the utility industry and the steel industry? The primary difference would seem to be that a utility is a natural monopoly and, therefore, its prices are under governmental control, while steel is a competitive industry and therefore under no control.

Another important difference is that the utility must plan and purchase equipment some four and five years ahead to meet its best estimates of the increased uses of electricity. A public utility has a high obligation to "be ready." It cannot decide that it has grown large enough and does not wish to expand, nor can it postpone its expansion plans due to a bad money market or expected recession. It must daily extend lines to have electricity ready and available for the homes, businesses, and industries. Many of the customers' requirements are small and do not pay incremental costs, while others may pop up anywhere with huge requirements equal to many thousands of small customers.

A utility cannot tell these large customers where they must locate in order that they may be served with less investment. A utility, such as Florida Power & Light Company, must obligate itself to purchase and pay for millions of dollars worth of equipment three and four years in advance, without having the money to pay for it or know how or from whom it will be raised. It must go to the money markets twice a year and sell bonds or stocks to insurance companies, pension trusts, and other holders of vast savings to invest.

Florida Power & Light, with a 7.1 per cent return on total capital in 1956, must compete with all industries for these savings. No one could well argue that the United States Steel Corporation, with earnings on total capital of 11.7 per cent; General Motors, with 17.6 per cent; General Electric, with 15.5 per cent; Standard Oil Company, with 14.5 per cent; and other similar large companies, cannot obtain money cheaper than Florida Power &

Light Company. Yet, one cannot help but wonder why a company that has to buy so much of its equipment and materials from these more prosperous industries, whose prices have more than doubled since the war, has so much difficulty in merely holding on to a price level, which is still less than prewar.

Why is it that, in the face of growing inflation and the risk of business slowing down to a point where the company may not need the plants under construction, it must be held down to such a fine technical margin of a return of say 6½ per cent or 7 per cent when it must compete for money with companies earning twice this rate?

MANY people seem to think that a utility is guaranteed a certain rate of return. Nothing could be further from the fact. The history of Florida Power & Light and many other utilities will bear out that no return is guaranteed. Utilities, such as street railway companies, many manufactured gas companies, railroad and bus companies, have completely failed in business while many others of this type are struggling just to make operating expenses. Very few of such utilities now make anything like a "reasonable return." Just try to get a rate increase during a recession in order to get up to a so-called "reasonable return." The attitude of the public during the 1932 depression was "everything else is coming down, why should not electric rates come down"? Under public pressure, rates were reduced. A "reasonable return" then was what other industries were earning under depression conditions—why shouldn't it work both ways?

Another highly important difference between the utility and the manufacturing and oil industry is that the so-called competitive industries can price their product to get enough money to pay for a large part of their expansion program. Some of the very largest industries with a very large construction program have gotten all of their costs of new plants and facilities from increased prices to the customer. For Florida Power & Light to do the same, it would have to add approximately 70 per cent to its prices and earn 18 per cent to 20 per cent instead of the 7 per cent it would like to continue to earn, but will not be able to do immediately because of the rate cut required by the commission.

A large part of the capital invested in American enterprises is in the regulated industries, the railroads, gas and electric companies, airlines, bus lines, and others. The public does not realize the squeeze that these regulated industries are now in and may not realize it until it is too late. Steel, aluminum, copper, petroleum, coal, labor, and, last but not least by any means, TAXES, make up the major cost of those regulated businesses.

THE tremendous increases in the costs of these items *versus* the pressure of regulatory authorities, to hold rates and fares down, is the squeeze they are in. The cost of money has gone up, but not nearly as much as any one of the major items referred to. It is a fair statement to say that during the same period, the over-all cost of money has gone up only approximately 15 per cent to 25 per cent, an increase in the rate itself of from a minimum of 1 per cent to perhaps an average of 1½ per cent.

How much better off would a purchaser be if the cost of other items had gone up only 15 per cent to 25 per cent since the war? Yet, the regulated industries have an almost impossible task of getting the regulatory authorities to recognize the smallest increased cost of all; namely, the increased cost of money. It is so simple to add 1 per cent or 1½ per cent to the former

6 per cent or 6½ per cent return, considered ample in prior years by regulatory authorities, and come up with today's approximate cost of money.

No one can say exactly what the present cost is or will be, inasmuch as the demand for new money seems to be greater than the supply. Because of growing inflation, the changing cost of money, and the huge obligations a utility incurs in advance, it is necessary to raise money somewhat more in advance than it used to be. Therefore, it seems most prudent to have an ample supply of working capital so as not to be caught with short-term loans or be forced to finance if the money market is bad.

Regulatory commissions in the past have not recognized the need of much working capital and have eliminated a large part of it in determining a so-called rate base. Inasmuch as the working capital comes from securities sold, a utility is obligated to pay the cost of money represented by the security sold and cannot reduce its bond interest by the amount the regulatory authorities reduce working capital.

There are other hairsplitting technical applications to a regulated industry's balance sheet which deprive it of earnings on its total capital.

All of these things add up and seem to make the risk of a public utility greater than that of a steel company and particularly the petroleum industry, whose supply is regulated and balanced by the Texas commission, so that there will not be an oversupply of oil products in this country which would result in lower prices of petroleum products.

In the early court decisions to determine the rate of return of utilities, the court laid down the principle that a utility was entitled to earn a rate of return similar to that being earned by other industries having similar risks. That principle today, in its application to present rates of return throughout the country, has been discounted at least 50 per cent when practically all industries of similar and even less risks are earning more than twice that of regulated industries.

—McGregor Smith,
Chairman of the board, Florida Power & Light Company.

Liberalized Depreciation

The growing use of the tax deferral accounting procedure in utility regulation drew sharp criticism recently in an address presented before the Midwest Association of Railroad Commissioners meeting in Kansas City. The speaker was Asel R. Colbert, chief of the accounts and finance department of the Wisconsin Public Service Commission.

According to Colbert, the Federal Power Commission and a number of state commissions have misinterpreted or misunderstood the intent of Congress in dealing with liberalized depreciation, covered in § 167 of the 1954 Internal Revenue Code, and the provisions of § 168 covering the 5-year amortization of defense facilities. In the recent Amere case (1956) 13 PUR3d 339, the FPC stated it could find no legal difference between the problems presented by the two sections and held that the commission's treatment of the 5-year amortization is completely controlling in the matter of liberalized depreciation. "If the commission adheres to this view," said Colbert, "it means that in its regulation of

licensees, utilities, and natural gas companies that (1) operating expenses allowed in rate cases will include an amount for supposititious deferred taxes and (2) the accumulated amount of such charges would not be deducted in determining the rate base."

Colbert said at least 25 state commissions have, through formal orders or otherwise, permitted accounting for tax deferrals in connection with liberalized depreciation. Seven of these have authorized restricted surplus, fourteen a tax reserve, and four permitted either restricted surplus or a reserve for tax deferrals. The majority of these orders, said Colbert, expressly exclude consideration of procedure to be followed in rate cases. In this respect, at least three commissions have held that the tax savings from liberalized depreciation should flow through to the consumer, and one of these canceled its prior order permitting normalization of taxes through restricted surplus.

THE legislative background of § 167 of the 1954 code, Colbert stated, indicates that Congress had a different purpose in mind than that assumed by the FPC.

Liberalized Depreciation

Section 167 provides that in computing federal income tax liability, there should be allowed as a depreciation deduction a reasonable allowance for exhaustion, wear and tear, and obsolescence of property used in the trade or business. The same general rule for a "reasonable allowance" for depreciation had been included in prior Internal Revenue acts, but there was no definition of the term and no specific methods were mentioned. This situation had given rise to considerable controversy between taxpayers and the Internal Revenue Service. Accordingly, Colbert explained:

> . . . the 1954 revision was designed to make it clear that certain specified methods were appropriate for use in determining a "reasonable allowance" for depreciation. This was done by providing specifically that the term "reasonable allowance" should include depreciation computed by:
>
> 1. The straight-line method,
> 2. The declining-balance method, as defined,
> 3. The sum - of - the - years - digits method,
> 4. Any other consistent method, as further explained in the code.
>
> This lifted the burden of proof of reasonableness from the taxpayer in the event he chose to use the declining-balance or sum-of-the-years-digits method in computing the depreciation allowance.
>
> Thus, all that the 1954 code did with respect to depreciation was to clarify the prior law in an endeavor to make it more practical and to liberalize to some extent the allowances for depreciation. No other purpose, stated or implied, can be found in the 1954 code.

COLBERT pointed out that there is no reference in § 167 to "deferred tax liabilities," "reserve for deferred taxes," "interest free loans to utilities," "restricted surplus," or any of the other terms used in connection with liberalized depreciation.

What Congress had been dealing with, he insisted, "was *depreciation* and it made this crystal clear in the code itself and in the record of the hearings on the 1954 Revenue Act and the committee reports on the bill."

Colbert then went on to explain:

> Representatives of American industry

pleaded at committee hearings that more depreciation should be allowed. Straight-line depreciation was declared to be inadequate. More depreciation in the early years of life of property was claimed to be needed and to be in accord with the economic facts regarding depreciation of property. The existing tax depreciation system was said to be the worst of any important industrial country in the world.

Congress received the request of business favorably and liberalized the depreciation provisions of the tax code. Committee reports on the tax bill show that this action was based on what Congress considered to be sound depreciation principles conforming with the facts proven by the experience of business that property, in many instances, depreciates more rapidly and suffers its greatest loss in economic value in the early years of life.

COLBERT then continued with the following comment:

Further, the liberalization of the reasonable depreciation allowance applied to the life of property as well as to the method of depreciation accounting. A service life used in determining a reasonable allowance for the deduction of depreciation for income tax purposes, which is shorter than that used in the accounts, results in a liberalized depreciation allowance just as effectively as the use of the declining-balance or the sum-of-the-years-digits methods. And, in this respect, it may be observed that utilities have for years had the benefits of liberalized depreciation, as the amounts claimed and allowed in tax returns has very frequently been considerably in excess of depreciation per books.

Finally, the House committee stated clearly that the liberalized depreciation provisions were for the purpose of determining what was a *reasonable* allowance under the statute.

The Senate Finance Committee approved the provisions for liberalizing depreciation allowances, adding the sum-of-the-years-digits method as one of the methods qualifying for use in determining a reasonable allowance for depreciation.

It is clear from the foregoing that the only justification for the liberalized depreciation provisions of § 167 was to assure that claims made for depreciation under the designated methods would constitute a "reasonable allowance for the exhaustion, wear and tear (including a reasonable allowance for obsolescence)."

Congress knew that more rapid recovery of investment for tax purposes would generate cash from operations which would be available for capital purposes. Indeed, the financing of property additions and replacements with funds retained in the business through depreciation accruals is a normal everyday business transaction. Congress simply thought it would be stimulating to the national economy if these funds generated by depreciation provisions were made available at a faster rate, more in line with the facts as to the actual occurrence of depreciation and, accordingly, authorized a liberalization of the depreciation provisions in § 167.

THE intent of Congress in enacting § 167, said Colbert, found its clearest expression in the decision of the superior court of Pennsylvania in the Manufacturers Light & Heat Company case decided December 28, 1956, 17 PUR3d 249, in which the court said:

. . . The 1954 code did not prescribe accelerated depreciation as a new method in addition to those previously in effect, but rather retained the basic provision that a "reasonable allowance" could be deducted, and specifically defined it to include the accelerated methods in a less restricted form. The 1954 code simply clarified the prior law, made it more practical in administration, and liberalized the prior accelerated methods to some degree. There is no other specific purpose or object expressed or implied in the code itself. . . .

Colbert's thesis is that the tax deferral accounting procedure is technically wrong and is not consistent with the public interest.

He especially emphasized, in his discussion, the error if the accumulated tax reserve should not be deducted in computing the rate base and to point out the serious consequence that may evolve therefrom.

IN accordance with the provisions of § 167, many utilities have been for years, and now are, receiving allowances for depreciation for federal income tax purposes larger than the amounts recorded in their accounts. But no liability for deferred taxes has been set up. Considering that their accounts have for years been subjected to scrutiny by regulatory agencies and been audited by governmental and public accountants, Colbert thinks that if any deferred tax liability existed it most certainly would have been brought to light.

The fact is, however, no liability for future taxes existed.

"Accordingly," he said, "since the use of liberalized depreciation does not give rise to an actual liability for future taxes, it would be a padding of expenses to make charges to operating expenses for a fictitious liability."

Commenting on the argument that, irrespective of whether any actual liability for future taxes exists, although liberalized depreciation allowances reduce present income taxes, future taxes will be correspondingly increased and, therefore, income tax expense should be normalized through reserve accruals, he stated:

> The fact is, however, that when liberalized depreciation methods, such as the declining-balance method or sum-of-the-years-digits method, are applied to a continuing plant comprised of a large number of units (which is characteristic of utility plant), *the annual depreciation charges under the liberalized methods will be higher than under the straight-line method if the plant continues to grow; and, even if the plant should become static after having attained a stable age distribution, the annual charges under the liberalized methods would not be less than under the straight-line method.*
>
> In these circumstances, no deferred tax liability is incurred through use of liberalized depreciation but instead an actual reduction in taxes payable is obtained.
>
> This reduction in taxes is not offset by later increases and, accordingly, there is nothing to normalize.
>
> This condition applies particularly to utility properties which are comprised of a large number of units some of which are retired in the early years of life with others living substantially longer than the average. . . .

"THOSE who accept the tax deferral view, even with respect to a single unit or the additions of a single year, are confusing a liability with a decrease in the

value of assets," Colbert continued. "The fact that the cost of property is deductible for income tax purposes through charges for depreciation is a valuable right or privilege associated with the ownership of the property. As the depreciation of property is taken as a deduction for income tax purposes, the amount of depreciation remaining to be deducted is decreased and a part of the value inherent in the property is reduced. This using up of the depreciation allowance inherent in the property should be accompanied by a decrease in the asset, or what is the same in net effect, an increase in the depreciation applicable thereto.

"No valid support can be found for the premise that the using up of the value of property gives rise to a future tax liability. It is merely a matter of properly and adequately recording the depreciation thereon."

Colbert gave a striking illustration of the difference in accumulated depreciation under the sum-of-the-years-digits method and under the straight-line method. Taking data for a characteristic property and using the digits method, the depreciation reserve would build up to nearly 64 per cent of plant and the straight-line reserve to about 43 per cent, a difference equal to about 21 per cent of plant. This difference would exist with respect to a plant with no growth and a stabilized age distribution. Colbert said:

> Somewhat different comparisons will be indicated by different lives and life tables. For example, for a 33.3-year life table . . . the depreciation reserve under the digits method exceeds the straight-line reserve by an amount equal to 22.7 per cent of plant. This life and mortality dispersion is generally characteristic of substantial amounts of utility plant.

What is the effect on capitalization of a utility which had accumulated additional tax depreciation equal to 22.7 per cent of its plant? The tax savings on this additional depreciation at 52 per cent would be 11.8 per cent of undepreciated plant cost. If this were segregated in a tax reserve, Colbert explained, it would aggregate about 21.4 per cent of the depreciated plant or of capitalization.

The actual capitalization of electric utilities at December 31, 1955, was 50.7 per cent debt, 12.3 per cent preferred stock, 28.7 per cent paid-in common capital, and 8.3 per cent earned surplus. With the same debt and preferred stock, the existence of a tax reserve of 21.4 per cent would require that only 7.3 per cent of capital be obtained from common stock.

"This means that the consumers would have to pay in three times as much capital to the utility as the common stockholders themselves," said Colbert. "Further, with the tax reserve not being deducted from the rate base, the consumer would get no return on the capital he had contributed." He added:

> The common stockholder would, of course, get fantastically high returns on the capital he supplied. Earnings of 10 per cent on the total common capital of 37 per cent . . . would yield over 50 per cent return on the 7.3 per cent of capital paid in by common stockholders. I am confident such a result was never intended by Congress in enacting § 167. Yet it is the potential consequence of accruing amounts for suppositious tax liabilities with such accruals not being deducted from the rate base.
>
> I am equally confident that such procedure will come into disrepute as factual knowledge regarding the effect of such treatment of the liberalized depreciation problem becomes more widespread.

How has the Wisconsin commission handled liberalized depreciation? In eight cases, said Colbert, upon application by the utility, the previous order of the commission certifying depreciation rates for the utility was supplemented so that depreciation expense recorded in the accounts could include an amount of depreciation equal to the taxes saved through liberalized depreciation in addition to depreciation at the certified rates. Expressed in another way, the book depreciation expense on the property to which the liberalized provisions of § 167 is applied, is based on giving 52 per cent weight to liberalized depreciation and 48 per cent weight to straight-line depreciation. He continued:

> The straight-line method has long been considered to conform to accepted accounting principles. Congress has said the proposed liberalized system "conforms to sound accounting principles." And accounting authorities generally accept the liberalized methods as sound. Certainly, then, no valid criticism, on the basis of accounting principles, can be given to a procedure which gives weight to each method."
>
> Under the Wisconsin procedure, the additional depreciation expense is allowed under the provisions of § 196.09 of the Wisconsin statutes which provide that depreciation determined by the commission pursuant to such section is allowable in a proceeding involving the service rates of a utility. This removes any speculation as to the rate-making treatment of the item.
>
> At the same time, the federal income taxes of the utility are recorded in the accounts at the actual liability for payment thereof and this amount is allowable for rate purposes. The increase in depreciation expense and the decrease in taxes offset so there is no immediate effect on income. However, the utility, by being allowed the additional depreciation expense, has the benefit of the cash thus retained in the business. This cash is available for plant construction and thus reduces the amount of capital necessary to be obtained from outside sources, thus strengthening the position of the investors in the utility and improving its competitive position with other utilities, including those owned by government.

Colbert said the customer benefits because the accumulated additional depreciation reduces the rate base and lessens the amount of return required to service outstanding securities. Thus, although initially paying depreciation expense more rapidly, the customer in the long run receives full credit therefor.

In conclusion, Colbert emphasized that the Wisconsin method can be carried out simply and easily by increasing the allowance for depreciation expense in an amount equal to the tax savings from liberalized depreciation. He concluded that it permits the accounts and financial statements of utilities to conform with the facts regarding both depreciation and taxes; and, he added, it is fair both to the investor and the consumer interest.

"Even in our still free society, the years have been full of 'emergency' federal measures which have grown both permanent and vast. 'Help' to farmers is one notorious instance; the upshot is that the farmer is no longer a freeman but a ward of government."

—Editorial Statement,
The Wall Street Journal.

The March of Events

AGA Hails Court Action

THE decision by the U. S. district court in San Francisco, penalizing a California manufacturer of water heaters for unauthorized use of the American Gas Association's seal of approval, has been hailed by the AGA as a clear-cut precedent which will mean continued protection for the gas industry's coveted "blue star" approval seal granted to appliances which meet rigid standards of performance.

The manufacturer was fined $5,000 and two firms, which this manufacturer headed, were fined $2,500 each by Federal Judge Carter for violating a permanent injunction issued in 1953. Judge Carter warned that further violations will result in imprisonment.

Action was instituted against the manufacturer in 1953 on grounds that he had used the AGA seal of approval on gas appliances which had not been approved. This resulted in a permanent injunction being issued against the manufacturer on December 9, 1953. AGA subsequently contended the injunction was not being observed and that the manufacturer should be cited for contempt of court. Approximately three years of litigation ensued, culminating in the $10,000 in fines.

Assurance of Dam Power Share Denied

THE House Public Works Committee has struck out of a Senate-passed bill language which would have reserved to South Dakota a sizable share of the power to be produced by the proposed Big Bend dam on the Missouri river. In approving the bill, the House committee refused to go along with the proposal, on the ground that it violated the preference clause which governs the distribution of power from federal dams.

The language in the Senate bill specified that "an equitable proportion" of the power from dams to be built (as determined by the Secretary of Interior "or such portions as may be required from time to time to meet loads under contract") shall be made available in the state in which the dams are to be constructed.

California

Gas Rates Raised

SOUTHERN CALIFORNIA GAS COMPANY raised its earlier plea for increased rates when it told the California commission it needs a boost of 3½ per cent more than the 8 per cent originally requested last March 10th. If approved by the commission, the higher rate would add from

66 to 71 cents a month to average consumer monthly bills.

A company spokesman told a commission hearing panel that increases in financing costs, together with a wage boost of $1,447,000 in April and an additional $2 million in gas costs, were not included in the original application.

It was also pointed out that first mortgage bond buyers are demanding 5.1 per cent instead of the 4½ per cent return anticipated.

Florida

Utility to Fight Rate Reduction

THE Gulf Power Company of Pensacola has given notice that it plans to fight a rate reduction proceeding filed against it by the Florida Public Utilities Commission. The utility asked the commission to dismiss the order which directed it either to reduce rates or show cause why the commission should not reduce them.

The utility company asked for the opportunity to argue its motion orally. The commission has set no date immediately for hearing the arguments.

The commission in June asked both Gulf Power and Florida Power & Light Company of Miami to reduce their rates. Florida Power & Light has proposed a lower rate schedule which has not yet been approved by the commission. Florida Power & Light asked to put the lower rates in effect by July 25th, but the commission declined in order that its rate specialists might have more time to study the over-all effects of the proposal.

Illinois

Rate Schedules Filed

DETAILS of a proposed rate increase announced by Commonwealth Edison Company, early last month, were made public on July 23rd when the utility filed new rate schedules with the Illinois Commerce Commission. The revised schedules provide for increases averaging approximately 7½ per cent and aggregating about $2.1 million a month. Federal income taxes and other taxes would reduce the net gain to the utility to something more than $900,000 a month.

The new rates affect substantially all classes of customers of both Commonwealth Edison and its Public Service Company division. Increases for residential customers served by the system will average less than 50 cents a month.

Willis Gale, chairman of Commonwealth Edison, stated that higher money costs and rising prices forced the utility to file the revised rate schedules. He said that "Commonwealth Edison, in its 70-year history, has had only one general rate increase—6½ per cent in 1954. In the Public Service area rates were increased also during the inflationary period of 1918-20. On the other hand, there have been 26 rate reductions in Chicago and 37 rate reductions in the Public Service area." He said the increase is related to the company's obligation to provide the expansion of electric facilities needed to keep pace.

"Despite our most vigorous efforts to resist inflationary pressures," Gale stated, "Commonwealth Edison has found that the present rate structure does not produce sufficient revenues to maintain operations and preserve the healthy financial structure necessary to support the huge construction program we must carry out."

New Hampshire

State Utility Tax Challenged

NEW HAMPSHIRE'S supreme court, after hearing arguments, took under advisement a suit challenging the constitutionality of the state's $500,000-a-year tax on electric and gas companies. Validity of this tax was attacked by the Public Service Company of New Hampshire. The utility contends that since a franchise has no value as such, it should not be taxed.

Deputy State Attorney General Waters, who prepared the state's case, argued the franchise is taxable as it represents all the intangible values of the utility.

The utility company has paid the tax under protest since 1954 after its franchise tax was increased from $89,600 in 1953 to $139,200 in 1954.

Virginia

Telephone Rate Increase Proposed

THE Virginia State Corporation Commission has scheduled a hearing for October 15th-17th on an application by the Chesapeake & Potomac Telephone Company of Virginia for permission to increase its rates to produce $6,541,000 in additional annual gross revenues to the company.

Since World War II the company has asked for and received rate increases five times. The last one was in June, 1954, when the commission approved a rate boost that amounted to 63 per cent of what the company sought.

West Virginia

United Fuel Ups Rates

AFTER having been authorized earlier to charge its West Virginia residential customers about $10 more a year each, United Fuel Gas Company has now received permission from the public service commission to boost such rates by another $15 annually.

Acting on a company request for $4 million more a year in gross revenue, the commission gave the utility authority to raise its rates by $1.5 million annually. A commission spokesman explained that the latest increase followed the line laid down by a recent West Virginia supreme court decision. The high state court held that the commission must take into account the amount United Fuel pays for gas piped into West Virginia from out of state as well as the cost of gas produced in West Virginia.

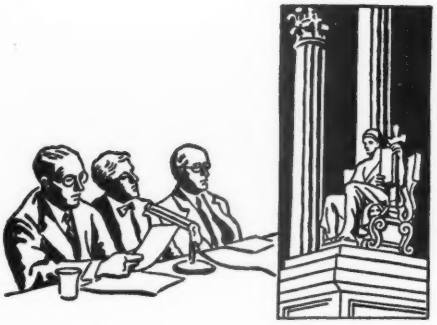
Wisconsin

Telephone Rates Approved

THE Wisconsin Telephone Company has been authorized by the state commission to increase its local exchange rates by $4,603,000 annually and to reduce intrastate long-distance rates by $2,351,000.

The company said the increases in local rates would be put into effect immediately, with the reduction in long-distance rates to go into effect September 21st.

Calling the commission's order "disappointing," a company statement declared that the Wisconsin commission approved in its entirety the utility's request for reductions but granted only a part of the proposed increases so that the net increase in company revenues is "one-third less than we requested."



Progress of Regulation

Trends and Topics

Financial Emergencies Justifying Interim Rate Relief

MANY commissions exercise considerable discretion in passing upon financial emergencies claimed to justify interim rate relief. State statutes variously authorize emergency rates "to prevent injury to the business or to the public interest," when "public interest requires," or "for good cause shown," etc. Two statutes have been noted which provide for emergency relief if the utility's revenues do not afford a reasonable return and if a regular rate proceeding will take more than ninety days. According to the California commission, the absence of specific statutory authority would not preclude a commission from awarding emergency interim rates since the general authority to grant rate relief carries with it the power to give any lesser relief, including interim rates (78 PUR NS 491, order reversed in part on other grounds).

The fundamental criterion of an emergency warranting interim relief, generally speaking, would seem to be whether the utility can continue to furnish adequate service pending the establishment of permanent rates. More immediate tests, however, have been recognized, including the utility's inability to obtain needed capital on reasonable terms because of low earnings, its inability to meet minimum obligations, and financial difficulty resulting from a sharp increase in commodity cost, wage increases, or other costs.

Consumer Interests Safeguarded

It has been argued that to allow a company to put increased rates into effect before a regular rate proceeding is completed amounts to making a guess that the company is right and the protestants are wrong. Rates so allowed, it was said, would penalize consumers. This argument may have some merit in special circumstances, but there are a number of ways in which consumers are protected.

At the outset, the applicant has the burden of proof that a financial emergency exists which demands emergency rate relief. The evidence, as the California commission recently held in the Citizens Utilities Company case, must show a *present* emergency (case reviewed in PUBLIC UTILITIES FORTNIGHTLY, August 1, 1957, page 210). Nor is the burden of proof sustained, the commission in-

dicated in the Southern Counties Gas Company case, until all pertinent evidence has been presented (18 PUR3d 338). No distinction is to be made between emergency rate relief and a permanent rate increase, the Indiana commission observed, in so far as either is related to reasonably adequate service (96 PUR NS 613). A paramount consideration in either case is the quality of service being provided under existing rates.

In determining a temporary rate increase, the commission will take into account the level of rates which can reasonably be expected to be sustained as permanent rates. As the Pennsylvania commission has indicated, it is usually desirable, for the protection of the utility and consumers alike, to set temporary rates as close as possible to the rates that will finally be determined to be just and reasonable (88 PUR NS 517).

Furthermore, interim rates are often conditioned upon an undertaking to refund amounts ultimately found to be excessive.

Capital Attraction as Emergency Factor

An emergency rate increase may be granted, the Massachusetts commission ruled, where such relief is necessary to enable the utility to pay dividends which will keep the market value of its stock at least at par and assure financial stability (70 PUR NS 56). The company needed new capital for necessary expansion. It was earning only about 4 per cent return and had been forced to reduce quarterly dividends. In the absence of emergency rate relief, it would have been handicapped in obtaining additional capital. A financial emergency was made out warranting emergency relief "for good cause shown." The commission later found an emergency warranting immediate rate relief where a utility, beset by tax and wage increases, was no longer able to realize its authorized return (89 PUR NS 80). The company was faced with the imminent necessity of refinancing short-term debt.

The pendency of a commission investigation into the methods and practices of a telephone company as an incident to a regular rate proceeding was not adequate justification for the commission's denial of emergency relief from heavy losses, the New Hampshire supreme court held (75 PUR NS 370). The necessity for emergency relief depends on a utility's immediate financial need, it was observed, and not on its long-term methods and practices. The company claimed that its losses had impaired its credit to such an extent that it could no longer sell its stock at par, and it could not legally sell it for less. The court thought this situation could be regarded only as an emergency calling for prompt emergency relief.

The court held in the same case that the question of a proper return for the company was not properly before the commission on the emergency rate request. But the minimum emergency relief to which the company was entitled was a sum which would end operating losses and meet accruing interest on bonds.

"Until such permanent rates can be established, stockholders must expect to share the burden of abnormal costs without transferring the whole to the public under the guise of emergency relief," the court stated.

From Minimum Needs to Fair Return

A utility's need for emergency rate relief must be gauged by the question whether a return on a fair rate base is confiscatory or approaches a confiscatory level, the Michigan commission declared (79 PUR NS 445). This level is reached when earnings have declined to such a point that the utility cannot be expected to serve its customers reasonably. A gas company's return of 2.16 per cent was considered confiscatory in view of its need for new capital.

The Ohio supreme court, in affirming a temporary rate increase, held that the commission's inability to give prompt consideration to an application for a rate increase, coupled with the inadequacy of the utility's revenues to pay interest on bonded indebtedness and dividends on preferred stock, provided a proper basis for declaring an emergency (99 PUR NS 12). A contention that the company should have anticipated its financial difficulties and sought an increase sooner was rejected as an argument against emergency relief.

The Minnesota supreme court ruled that the commission had authority to fix emergency transit fares at such a level as would provide not only for fixed charges and operating expenses but also yield a reasonable return (79 PUR NS 407). The Missouri commission allowed a temporary telephone rate increase where it was convinced that "not even approximately a fair return" was being earned (77 PUR NS 431).

A multiple service company was denied interim water rate relief by the California commission in the face of contentions of confiscation and need for immediate relief in order to secure new capital (Citizens Utilities Company case, above). The commission found that the company's over-all operations returned 5.8 per cent during the previous year and that its water department earned 4.8 per cent. No present financial emergency was indicated. In other California cases it has been held that an interim rate increase is allowable only when minimum financial obligations cannot be met prior to the establishment of permanent rates.

The Wisconsin commission granted a transit company a temporary rate increase on a showing that its operating ratio was 97.6 per cent and that it had failed by a wide margin to meet its preferred stock dividend (4 PUR3d 122). In an earlier proceeding before this commission, a gas company which was earning a 4.1 per cent return failed to get interim relief since it made no showing that its service would be jeopardized by the continuation of existing rates (66 PUR NS 113). The commission also refused an emergency increase for a gas company which was earning a 2.7 per cent return (71 PUR NS 26). After further hearings, however, it was determined that the low return in fact impaired the company's finances and a temporary increase was authorized.

A telephone company earning a return of 4 per cent was denied interim rate relief by the Indiana commission (96 PUR NS 613). Noting that it had set the company's application for hearing within a reasonable time, the commission ruled that the circumstances indicated no emergency. The Oregon commission found no emergency in the case of a railroad which enjoyed compensatory rates (38 PUR NS 444).

Increased Costs Create Emergency

Commissions have recognized sharp rises in commodity cost or other cost increases as necessitating emergency rate relief (2 PUR3d 65; 77 PUR NS 105; 76 PUR NS 31). The New York commission indicated that interim rate relief should be granted as quickly as possible where a transit company, threatened with a strike, has entered into a contract for immediate wage increases payable as soon as a rate increase can be obtained (76 PUR NS 251). Similarly, the California commission said rate increases should be authorized on the basis of wage increases granted, though not for wages merely offered but not effective (78 PUR NS 491).

Review of Current Cases

Uniformity Required for Intrastate Toll Rates And Provision Made for Coin-box Refund

IN two companion cases, the Tennessee commission authorized the Inter Mountain Telephone Company and the Southern Continental Telephone Company to increase intrastate toll rates to correspond with rates being charged by the Southern Bell Telephone & Telegraph Company.

Both utility companies own intrastate toll lines between points on their systems in Tennessee. These points connect with toll lines owned by Southern Bell Telephone & Telegraph Company at various points on its system for intrastate toll service to other points within the state. A large percentage of their intrastate toll business is over the lines of Southern Bell.

The commission noted that it has been its policy for many years to maintain uniformity of intrastate toll rates within the state between all points and between all telephone companies. Since Southern Bell operates and maintains approximately 90 per cent of the intrastate toll lines within the state, its toll rates generally establish a pattern throughout the state. The commission said that discrimination contrary to state law would exist if a different basis of intrastate toll rates were effective between the Southern Bell system and a connecting telephone system.

The supreme court of Tennessee on May 3, 1957, allowed Southern Bell to place into effect, subject to refund and secured by bond, increased rates including intrastate toll rates. These rates have been placed in effect. Consequently, the petitioning companies filed similar rates for toll service and requested that they be made effective concurrently with the rates of Southern Bell subject to refund and secured by bond.

The commission concluded that if the petitioning companies had one set of intrastate toll rates and Southern Bell had another, it would result in discrimination and present a very difficult accounting problem and would be inequitable. Consequently, it approved the proposed rate increase in conformity with its policy that intrastate toll rates should be uniform.

Refund Provisions

The rate increases were made subject to the companies' giving a surety bond conditioned to refund to their subscribers any increase in intrastate toll rates charged unless the same correspond to the rates

finally approved by the court in the Southern Bell case. If a refund should be ordered, the companies would be required to refund the full amount of any increase to the subscribers paying the same, and they should not be authorized to deduct any sum for accounting or other charges.

The commission also specified the type of notice to be posted at its coin stations, advising persons making long-distance calls between points in Tennessee from coin telephones to make and retain a memorandum record of such calls to be subsequently presented to the company as a basis of a claim for a refund in the event that any such refund shall become due.

The memorandum should show the date, approximate hour, and amount deposited for such call, the city and telephone number from which the call was placed, the city and telephone number or person to whom the call was placed, and the name and address of the party making such a call.

The commission advised, however, that this was a temporary order subject to such further orders as might be necessary upon the final order of the supreme court in the Southern Bell case. *Re Inter Mountain Teleph. Co. Docket No. U-3996, May 17, 1957; Re Southern Continental Teleph. Co. Docket No. U-3997, May 17, 1957.*

"Little Inch" Conversion Sustained against Charges of Unfair Competition and National Policy Violation

FOLLOWING remand by the court of appeals (13 PUR3d 145), the Federal Power Commission has again decided the case of the Little Inch pipeline retirement. In its initial decision, the commission authorized Texas Eastern Transmssion Corporation to abandon that portion of the Little Inch extending from Baytown, Texas, to Moundsville, West Virginia, under § 7(b) of the Natural Gas Act, and to construct replacement facilities under § 7(e). The company intended to convert the pipeline to the transportation of petroleum products.

Upon appeal by the city of Pittsburgh and barge carriers, the case was reversed and remanded on an issue of future expansion needs and on the ground that the commission, which granted the authority on considerations of gas operations alone, should have considered evidence concerning the effect of the conversion on petroleum carriers, national antitrust policy, and national defense.

In "Part A" of this proceeding (15 PUR3d 224), the commission in effect reaffirmed its original decision on the issues considered, but the questions of competition and national policy were reserved for consideration in this opinion, "Part B." The commission has now determined in favor of Texas Eastern on all points. Abandonment of the Little Inch is now authorized, along with the maximum substitute gas facilities proposed by the company, and the company is free to convert the Little Inch to petroleum transportation.

At the outset, the commission noted that neither the conversion of the Little Inch to the transportation of petroleum products nor the operation of the line as a petroleum carrier is subject to its jurisdiction. But the commission does have jurisdiction over abandonment of natural gas facilities, and the court held that the harmful effects of the commission's authorizations alleged to result to the barge operators should be considered, as bearing on the public convenience and necessity, before the requested authority may be granted.

No Injurious Competition

While protesting barge carriers might feel a competitive rub at the outset of the Little Inch's petroleum operations, the record showed that virtually no economic injury would be sustained by them as a result of the conversion of the pipeline. There was more than enough potential traffic for both the barge operators and the Little Inch. Consumption in Texas Eastern's 11-state area had doubled in the last decade and a continuing increase was indicated—enough in a single year to make the Little Inch a feasible and profitable venture. It is to be noted, moreover, that an appreciable part of the pipeline's capacity would be used in transporting liquid petroleum gases which are not carried by barge.

The commission observed that even if the barge operators would suffer the considerable harm they feared, the public convenience and necessity would still require the authorizations Texas Eastern sought, in view of the many public benefits which would flow from the conversion. "What the barge operators are seeking, in effect," said the commission, "is protection from lawful competition."

Unfair Competition Charged

The barge operators conceded that it is not improper for a natural gas pipeline company to go into the petroleum pipeline business and that no authorization from the commission is necessary for that purpose. They charged, however, that the Little Inch, if converted, would enjoy special advantages of its association with Texas Eastern's natural gas business and that these special advantages, issuing from what was termed "its governmental-sheltered position," would give rise to unfair competition with the barge operators.

In the first place, the commission observed that competitive injury, if any, would be only temporary. They apparently complained of unfair competition though they would not, as a practical matter, be injured. Furthermore, any advantages enjoyed by Little Inch as a result of its association with Texas Eastern's gas business would redound to the benefit of the customers the company serves. The commission noted, moreover, that there was no unfairness involved in the circumstances of Texas Eastern's financial strength and prestige resulting in an ability to finance which an independent company might not have. Again, the public would benefit from any such advantage.

Antitrust Laws and National Defense

Nor would the conversion violate the antitrust statutes. On the contrary, the commission held that the project would foster competition and promote the policy of the antitrust laws. Besides, the public benefits from the conversion would outweigh any detriment that the narrow interests of the barge operators might sustain.

According to the evidence, the capacity of the Little Inch amounts to only 10 per cent of the estimated 2 million barrels of petroleum products that will be consumed in the company's 11-state area this year. This small percentage would hardly approach a monopoly, particularly considering the absence of an intent to monopolize.

The commission found that the conversion would be consistent with the national defense. This view was supported by statements from the Department of the Interior and the Office of Defense Mobilization. *Re Texas Eastern Transmission Corp. et al. Opinion No. 303, Docket Nos. G-2503, G-9784-G-9787, June 21, 1957.*

Rocky Reach Power Project Licensed without Reimbursement to Upstream Development

THE Federal Power Commission has again granted a license, under the Federal Power Act, for the Rocky Reach hydroelectric project on the Columbia river, after remand of the cause by the court of appeals. The court held that the intervener for the upstream Wells project, for which a permit had been issued, should have been afforded a hearing on substantive questions which were raised (18 PUR3d 256). On the basis of a "joint statement" filed by the intervener, the commission had understood that it did not desire a hearing.

In the first proceeding, the commission could not determine whether the Wells development would be economically feasible without reimbursement for the estimated decrease in potential power output due to overlap of the Wells tailwater by the Rocky Reach pool. The commission, consequently, conditioned the Rocky Reach license to require limited reimbursement. The intervener for Wells sought greater compensation and appealed. In the instant proceeding the commission took up that issue.

Reimbursement Not Required

The intervener did not contend that it had any property or vested rights which would be affected by Rocky Reach. It contended merely that the public interest in the Wells stretch of the Columbia river should be protected. This should be accomplished, it was said, by conditioning the Rocky Reach project to require reimbursement to the future owners of Wells for any loss of power head occasioned by the Rocky Reach pool.

However, at the authorized elevation of the Rocky Reach pool, the commission concluded on all the evidence that the Wells project would not be rendered uneconomic by the downstream development. The public interest therefore did not require the condition contended for, and the Rocky Reach license was issued without the reimbursement condition.

Intermediate Decision Procedure

The commission held that the instant proceeding, on remand due to the procedural defect, was still part of the determination of an application for an initial license and that the intermediate decision procedure could therefore be omitted under the Administrative Procedure Act. In order to expedite its decision on the Rocky Reach license and avoid delaying construction on the project, the commission denied the intervener's motion opposing omission of the intermediate decision procedure. *Re Public Utility Dist. No. 1 of Chelan County, Wash. Opinion No. 304, Project No. 2145, July 11, 1957.*

Panhandle's Canadian Export Authorization Upheld on Review Brought by Wholesale Customer

THE court of appeals has upheld a Federal Power Commission order (14 PUR3d 112) which authorized Panhandle Eastern Pipe Line Company to export a maximum of 15.5 million Mcf of natural gas per year to Union Gas Company of Canada on an interruptible basis. Since the gas to be exported is off-peak gas interruptible on days of peak demand, it will in no way reduce the amount of gas available to meet the pipeline's firm customers.

The proceeding resulted from the filing

of applications by Panhandle for authority to expand its system and for allocation of the resulting increased volumes of gas among its customers. Michigan Consolidated Gas Company was not included among the customers with which Panhandle entered into agreements for increased deliveries. It brought the instant review proceeding to have the export authorization set aside.

Service Impairment Claimed

Michigan Consolidated argued that the commission exceeded its authority under § 3 of the Natural Gas Act in authorizing the export, because the gas is needed in this country and will impair Panhandle's ability to render adequate service to local customers. On the basis of Panhandle's original expansion program, later reduced, Michigan Consolidated contended that local customers' requirements for gas on peak days were greater than the available supply.

The court pointed out, however, that the requirements were for peak-day gas whereas the gas to be exported is nonpeak interruptible gas which will be of no use to local customers. Furthermore, it is for the commission to determine what constitutes impairment of ability to render adequate service.

Storage Plan Proposed

Michigan Consolidated urged as an alternate plan that Panhandle's Howell field in Michigan should be developed for storage of interruptible gas for delivery to firm customers on peak days. But no customer demand had been voiced for this gas. The commission found, moreover, that evidence in respect to the availability of the field as a gas storage field was lacking. On this point, Michigan Consolidated urged that the commission was under an obligation to secure this evidence and could have done so by requiring Panhandle to show cause why it should not develop the Howell field instead of exporting gas to Canada.

The most that can be said for this argument, said the court, is that it is novel. The court continued: "In view of the lack of power of the commission to require a natural gas company to enlarge its transportation facilities, the authority of the commission to order the development of such a project is more than doubtful. However this may be, the burden of ascertaining the feasibility of an alternative proposal offered by an opposing party before the commission is certainly not upon the commission."

Local Preference Policy Recognized

It was objected that the commission failed to observe its prior policy of conditioning export authorizations to provide for preferential service to United States customers. The court ruled, however, that this policy had in fact been observed. The order provided that the authorization could be modified or terminated upon further order of the commission and that the authorization should not extend beyond the terminating date of the presidential permit relating to this exportation of gas.

Customer Right to Purchase Denied

It was insisted that export of gas should not have been authorized because Michigan Consolidated desired the interruptible gas for itself. Panhandle, it was said, should have been required to offer 100,000 Mcf per day to this customer. Essentially, Michigan Consolidated's position was that under § 3 it was not consistent with the public interest for the commission to authorize the export since such action would prevent Michigan Consolidated from exercising its alleged right to purchase this gas.

The commission had found that this customer failed to demonstrate that it had adequate and satisfactory markets for the gas. The commission concluded that it could not, on the record, authorize the sale of the gas to Michigan Consolidated. Nor did the fact that this company desired the gas render the export inconsistent with the public interest.

The court found that the commission's findings were supported by substantial evidence and that its conclusions were clearly within its special competence. So long as there is warrant in the record for the judgment of the expert body, said the court, it must stand. *Michigan Consol. Gas Co. v. Federal Power Commission, No. 12,069, July 16, 1957.*

Water Service Restricted to Housing Development Is Not a Public Utility

WHETHER or not a water utility has in fact held itself out as willing indiscriminately to serve all members of the public reasonably within the reach of its facilities, said the Connecticut commission, is a determinative factor as to whether or not the system constitutes a public utility.

Applying this test, the commission ruled that a water system owned and operated by a housing development was not a public utility and was not therefore subject to commission jurisdiction.

The development company had been serving a restricted group of customers in a real estate subdivision, retaining the right of selection. The water system was established for the purpose of facilitating the development and sale of building lots and not for "general domestic use." In order to warrant a finding that a water service is a public utility, the commission stated, there must be a holding out to serve the public generally for an indefinite period of time at uniform rates. *Customers of Marjorie Manor, Incorporated v. Marjorie Manor, Incorporated, Docket No. 9402, July 11, 1957.*

Commission Employs Original Cost for Rate Base and Depreciation Determinations

THE Missouri commission did not depart from past precedent in passing upon the propriety of a requested water company rate increase. The following formula was considered to include the best measure of value for rate-making purposes: original cost less depreciation plus materials and supplies times rate of return equals net operating earnings.

The product of the formula, *i.e.*, net operating earnings, is controlled by the amount determined to be proper for the rate base (original cost less depreciation) and the rate of return, commented the commission. Consequently, the objectives of a particular rate case are met by adjusting any one or both of the factors of the formula. The commission was of the opinion that the most satisfactory approach to obtaining that objective is to adjust the second factor (rate of return) and hold the rate base to an amount representing actual and known amounts of investment.

Normalization of Revenues and Expenses

The use of a rate base reflecting property at a specific time requires a statement

of revenues and expenses on a going level as of that time, the commission continued. This can be accomplished by normalizing revenues and expenses to reflect what they would be if all the customers being served at the end of the period had been served throughout the test year. In this manner, revenues and expenses will be entirely consistent with the property involved.

However, normalization of revenues and expenses does not require or warrant increasing the depreciation reserve by an amount which would have been in the reserve if the depreciable plant as it existed at the end of the period had been in service for the entire year. To do otherwise would distort the picture of a year's operations based on property as it existed at the end of the year, and on the number of customers who were actually being served on that date.

Depreciation Expense Basis

The company contended that depreciation expense should be calculated on the basis of the present fair value of the property rather than its value at the time it was put in public service; *i.e.*, original cost. Its theory was that it should be allowed to recoup a sufficient amount through charges to depreciation expense to replace the property when useful life is ended.

The commission, however, did not agree that this was the purpose. Rather, the purpose of depreciation accounting is to provide a means by which the utility can recover investments in a particular piece of property over its life by periodic charges to operating expenses. In the commission's opinion, the accrual rates established would adequately accomplish the purpose and the proper application to the original cost of the property was a sound basis for determining the amount of depreciation expense which would be incurred during a reasonable period in the future.

Dues and Donations

The company sought to have dues and donations considered as operating expense. There can be no doubt, said the commission, that the company is anxious to establish good will and should be permitted to do so. The commission's primary obligation, however, is to the ratepayers and the utilities regulated rather than to the communities concerned. Utility rates are at their present level because they have to provide for much more (principally taxes) than the bare cost of furnishing the service. The commission did not want to aggravate the condition.

Most utilities, said the commission, enjoy some benefits by reason of the fact that they are monopolistic in character, and consequently should be better able to ward off pressure on them for donations than can highly competitive enterprises. The benefits to be derived from making contributions to worthy causes redound primarily to the stockholder rather than to the ratepayer.

Miscellaneous Considerations

A return of 6 per cent on the depreciated original cost rate base was considered reasonable. Rate case expense was to be amortized over a 3-year period. Customer donations and contributions in aid of construction were excluded from the rate base, while income tax applicable to lapsed customer advances was included.

No allowance was made for cash working capital since funds were available from tax accruals. The commission considered it not only proper but necessary to take into consideration known increased pension costs, wage costs, and property tax costs for the next year, commenting that consideration of the known future increases would make future rates more realistic. *Re St. Louis County Water Co. Case No. 13,255, June 28, 1957.*

Attrition Factor Considered in Rate Case

THE Nebraska commission authorized the Northwestern Bell Telephone Company to increase rates to produce additional gross intrastate revenue of $1,294,006 in recognition of the fact that costs have increased materially since the test period on which its present rates were based. The commission observed that although any one is reluctant to pay a higher price for commodities or services, it is common knowledge that prices of almost everything have increased since the last increase in the company's rates was authorized on March 4, 1953. None of the protestants' witnesses gave any testimony which would be a basis for a finding that present earnings were sufficient.

One of the cost increases was wages paid to the company's employees. The other major increase was the so-called "attrition" of earnings which results from making replacements of and additions to plant at current high cost levels without developing an increase in revenue proportionate to the increase in plant investment.

Return Allowance and Rate Base

The company presented two rate bases. The first, based on the book cost of its intrastate plant and equipment plus materials and supplies and working capital, less depreciation reserve; the second, based upon the reproduction cost of its intrastate plant and equipment plus materials and supplies and working capital, less depreciation reserve.

The authorized rates were calculated to enable the company to pay reasonable dividends, meet its debt charges, attract additional capital, and provide for additions and betterments to its intrastate plant and equipment. The additional net earnings were calculated to be equivalent to a return of 6.20 per cent—6.50 per cent on a book cost rate base and 4.64 per cent on a reproduction cost rate base, fluctuations in the return on book cost depending upon recognition of such factors as depreciation reserves and working capital. *Re Northwestern Bell Teleph. Co. Application No. 20684, May 31, 1957.*

Criminal Contempt Conviction for Violating Injunction

THE United States court of appeals affirmed a lower court's judgment finding a motor common carrier guilty of criminal contempt for violating an injunction against the transportation of certain commodities in interstate commerce. The carrier held a certificate of public convenience and necessity from the Interstate Commerce Commission authorizing the transportation of household goods.

Kitchen and wall cabinets transported by the carrier, held the court, were not "household goods" so as to exclude them from the operational orbit of the injunction that had been issued restraining interstate transportation of new furniture, kitchen equipment, or similar articles. The court upheld the district court's finding that the articles transported were not of such unusual nature or value as to require specialized handling and the equipment usually used in moving household goods. Even though the carrier's acts might possibly not be beyond the scope of its certificate, said the court, the evidence was sufficient to show that the transportation violated the injunction. *United Van Lines, Inc. v. United States, 243 F2d 316.*

Comparative Rates Properly Considered in Reduction of Freight Rate and Reparation

THE Kentucky court of appeals affirmed a lower court judgment in favor of an electric generating company reducing the freight rate on fine coal and awarding reparation. The commission had found that railroads were charging an unreasonably high rate on fine coal delivered to the complainant, and the trial court in turn found that the commission's determination was supported by substantial evidence. Review of the administrative action, the appellate court observed, was necessarily limited to the question whether there was substantial evidence to support it.

The railroads complained that the commission had considered comparative rates which, they said, had been depressed to meet various types of competition. The court indicated that such rates were properly considered. In view of the large volume of freight hauled at competitive rates, no contention was made that they were not compensatory or that they were confiscatory. While competitive rates when compensatory may be just and reasonable, the court noted, evidence of such rates would not be controlling. Comparative rates should be examined with all other evidence and accorded their reasonable weight. Among other evidence, several reasons were cited as a basis for allowing fine coal a lower freight rate than other coal: (1) the railroads have generally allowed lower rates on fine coal; (2) fine coal is of less value than other sizes; (3) fine coal loads heavier; (4) there is a greater concentration of movement of fine coal; and (5) the value of transportation of fine coal is less to the shipper.

The trial court having upheld the commission's findings, which are accorded *prima facie* effect under Kentucky law, they could not be interfered with in the absence of clear and unmistakable error. *Louisville & N. R. Co. et al. v. Commonwealth of Kentucky ex rel. Kentucky R. Commission et al. 300 SW2d 777.*

Bridge Toll Charges Cut by One-half Reducing 81 Per Cent Return

THE Virginia commission, in what it described as an unusual case resulting in an unusual judgment, ordered the toll charges of the Boulevard Bridge Corporation reduced by one-half. On the basis of original cost less depreciation, the company's bridge was producing a net return of 81 per cent at the time of the state's complaint.

Reproduction Cost Rejected

The company urged consideration of reproduction cost. The commission noted that it did not allow any utility under its jurisdiction to earn a return on reproduction cost. It is enough to point out, said the commission, that the bridge will never be reproduced, as the company admits.

Evidence of cost of money was held to be irrelevant in this case since the company had no occasion to attract capital. On the contrary, it was gradually being liquidated. The commission also excluded opinion evidence on the legal issue of reasonableness on the ground that the issue was not one on which the testimony of expert witnesses could be received.

Depreciation of Property

Most of the original cost of the bridge

had been paid by consumers by way of depreciation at 2 per cent per annum over a service period of thirty-two years. Depreciation should be based on original cost rather than reproduction cost, the commission indicated, because it would be unjust to make present consumers pay for a new plant to be consumed by a future generation of consumers. If a new bridge is to be built, the necessary capital must be furnished by the investors and not the consumers.

Ruling Not to Be Precedent

If the orthodox method of fixing public utility rates in Virginia were applied (about 6 per cent return on original cost less depreciation), the annual earnings from the bridge would have to be reduced from about $100,000 to approximately $7,400. But in view of the particular circumstances of this case, the commission thought that would be unreasonably low.

In deciding upon a reduction of tolls by one-half, the basic toll apparently being 10 cents, the commission took into consideration the proposition that the average motorist would rather pay a nickel than be bothered with handling smaller change. With an unusually large return still remaining, the commission commented: "There is no precedent for this case and this case will not be a precedent for any other case." *Hammer v. Boulevard Bridge Corp. Case No. 13442, July 1, 1957.*

Mutual Telephone Company Authorized to Operate as Public Utility

THE Guilford Telephone Company, which has been operating as a mutual company for many years, has been authorized by the North Carolina commission to operate as a public utility in the area now served by it and in certain adjacent areas not served by adjoining telephone companies. The company is now organized and incorporated under the General Statutes of North Carolina by an amendment filed with the Secretary of State on December 31, 1956. It is in sound financial condition and has made provisions in its charter for the issuance of additional common stock to finance new equipment, facilities, expansion, and improvement of its service. Its existing rates were found to be reasonable.

The commission said that upon commencing operation as a public utility, the company should keep its books and records in conformity with the Uniform System of Accounts for Telephone Companies. The company was ordered to file with the commission, within a reasonable time, a map showing the area which it serves and holds itself out to serve. Furthermore, it should prepare and file with the commission a general exchange tariff setting forth all classes of service rendered, rates for that service, and all rules, provisions, and other service regulations relating to its operation as a public utility.

Meaning of Convenience and Necessity

Public convenience and necessity were construed to mean a reasonable necessity with regard to the convenience of the public and its welfare in the area involved. The commission observed that in determining the issue of public convenience and necessity, the controlling question is whether the operation will serve a useful purpose responsive to a public demand or need.

Consideration should be given to

whether or not the proposed service is needful, essential, requisite, or conducive to public convenience.

The company is now serving 965 subscribers and has numerous requests for telephones for residences and businesses in the area adjacent to that in which service is rendered. The commission concluded that this condition meets all the requirements of convenience and necessity essential to the granting of a certificate. The commission further concluded that the company is experienced in providing telephone service and that it could make the necessary arrangements for financing the extension and expansion of its service. *Re Guilford Teleph. Co. Docket No. P-24, Sub 1, June 20 1957.*

Service Area Ultimatum

THE Missouri commission, passing upon a complaint against telephone service, directed the company to take timely steps to provide good service if it expected the commission to protect the company's right to serve the area.

The company claimed that, by filing its exchange area map with the commission, it had the exclusive right to furnish service in the area, and opposed any invasion. Service presently being rendered was switcher service to patrons who owned and maintained their own lines, with the exception of a short company-owned line.

The commission pointed out that three telephone exchange area maps on file, two belonging to the company and the third covering another company's exchange, were binding on all parties. The exchange areas appeared to be practicable in size for operational purposes and to fairly distribute the territory involved.

The commission was not warranted in modifying exchange areas or their boundary lines unless evidence showed that existing boundary lines were unreasonable or arbitrary. Boundary lines would not be altered merely to change a patron to another operating company to avert a toll charge.

Because of the practicality of the exchange area maps, the commission was reluctant for them to be broken up as units.

The owners of the company were allowed a reasonable time in which to canvass the people of the area and to provide regular facilities to serve those who agreed to accept service. If the owners found themselves unable to construct lines which would provide good service, or to sell the facilities in the area as a unit, the commission commented that it would be their misfortune. They would not be permitted to hold mapped areas indefinitely while neglecting the duty to serve.

If steps toward prompt service were not taken, the commission intimated that it would give serious consideration to an order for the other company to take over the area as a unit. The well-defined exchange boundary lines of the areas would remain intact for whoever served in the future. *Thomas et al. v. Missouri Union Teleph. Co. Case No. 13,617, July 1, 1957.*

Prior Construction by Shipper Not Essential

A RAILROAD'S application for reconsideration of a commission order to construct, establish, and maintain a sidetrack and switch connection was denied

by the New York commission. The order had given the railroad the choice of constructing the sidetrack pursuant to either of two schemes. The railroad had contended that the order was improperly issued because the shipper did not own the property and had not constructed a private siding up to the railroad's right of way.

Even assuming that the railroad had correctly stated the federal rule to be that a railroad cannot be ordered to build a switch connection until after the shipper has built the private siding on its property, answered the commission, it does not follow that such a rule is binding upon the state commission. Analysis of New York litigation showed that the commission's practice of adopting orders directing railroads to construct switch connections with private sidetracks upon the construction of such sidetracks had met with approval. *Re W. F. Saunders & Sons, Inc. Case 18076, June 25, 1957.*

Other Recent Rulings

Showing of Need Not Required. The Illinois commission authorized a power company to increase street lighting rates without showing that additional revenues were needed to earn a fair rate on total investment where the company had proved the necessity for an adjustment in cost of furnishing new and ornamental installations and the immediate increases would amount to less than .2 of one per cent of gross revenues from electric operations in the state during the first year of operation. *Re Iowa-Illinois Gas & E. Co. No. 43898, May 8, 1957.*

Rail Rate Case Reopened. The North Carolina commission ruled that neither the principle of *res judicata* nor retroactive rate making was involved in the reopening of an intrastate rail rate proceeding to take additional evidence as to the reasonableness of rates approved by the commission but later held on review to have been based upon insufficient findings. *Re Railroad Freight Rates, Docket No. R-53, Sub 3, June 21, 1957.*

Consolidation of Applications. The United States court of appeals held that the question of whether the Civil Aeronautics Board should have consolidated an airline application with those of other applicants, even though the applications were mutually exclusive, was a matter of discretion for agency judgment. *Eastern Air Lines, Inc. v. Civil Aeronautics Board, 243 F2d 607.*

"Household Goods" Certificate. The United States court of appeals held that Interstate Commerce Commission regulations, defining "household goods" as specified commodities requiring specialized handling and equipment usually employed in moving household goods, afforded a motor common carrier, holding a certificate to transport household goods in interstate commerce, the right to transport metal bank and hospital equipment parts and metal desks in interstate commerce without being subjected to criminal penalty. *North American Van Lines, Inc. v. United States, 243 F2d 693.*

Transfer of Bus Operation. A district court held that the Interstate Commerce Commission had authority to approve a plan proposed by the Pacific Greyhound

Lines whereby it would transfer its San Francisco commuter operation to a newly formed subsidiary. *County of Marin et al. v. United States et al. 150 F Supp 619.*

Water Extension Rule. The California commission held that a provision in a water company's extension rule excepting applicants, who had negotiated with the company for an extension prior to the promulgation of the rule, did not apply to an applicant who negotiated before the rule was promulgated but let the negotiations terminate prior thereto. *Pickerel v. California Water Service Co. Decision No. 54353, Case No. 5647, January 8, 1957.*

Class Rates. The New York commission, investigating motor common carrier class rates, commented that mere paper rates on which traffic neither moves nor can be expected to move can and do exercise a disruptive influence upon the rate structure as a whole. *Re Rates, etc., of Motor Vehicle Common Carriers, Case No. 12877, June 4, 1957.*

Test Period Extended. Upon remand of a water rate case for further action, with directions that construction completed since the test period be considered in the determination of just rates, the Maryland commission allowed the operating results to be brought up to date, as is customary in rate proceedings involving a long interval between the initial presentation and the final hearing. *Re County Commissioners of Washington County, Case No. 5437, Order No. 52940, July 10, 1957.*

Surcharge Discriminatory. The Missouri commission held that a water company's rate schedule providing for a surcharge to customers using nonconserving type air conditioners was discriminatory and unreasonable since it failed to take into account other customers using the same amount of water in sprinkling, sodding yards, operating swimming pools, watering shrubs, and irrigating gardens. *Re St. Louis County Water Co. Case No. 13,649, June 27, 1957.*

Water Company Return. The Wisconsin commission considered a return of 5.5 per cent on a water company's net book value rate base reasonable. *Re City of Green Bay, 2-U-4785, June 11, 1957.*

Gas Rate Rehearing Denied. The Federal Power Commission refused to grant rehearing of an order denying a rate increase (18 PUR3d 233) in order merely to afford a natural gas producer a third chance to sustain its burden of proof, noting that further delay of a final determination would be contrary to the public interest; but a stay of a refund order was granted upon representation by the company that it would seek judicial review. *Re Forest Oil Corp. et al. Docket No. G-5510, June 21, 1957.*

Municipal Purchase of Utility. The Missouri commission authorized the sale of a waterworks system to a municipality where the evidence showed that service would not deteriorate since the city would retain present employees and competent management would be available from the city's operation of other utilities; and in view of the fact that the price, although higher than original cost, had been substantiated by expert testimony. *Re Springfield City Water Co. Case No. 13,693, July 5, 1957.*

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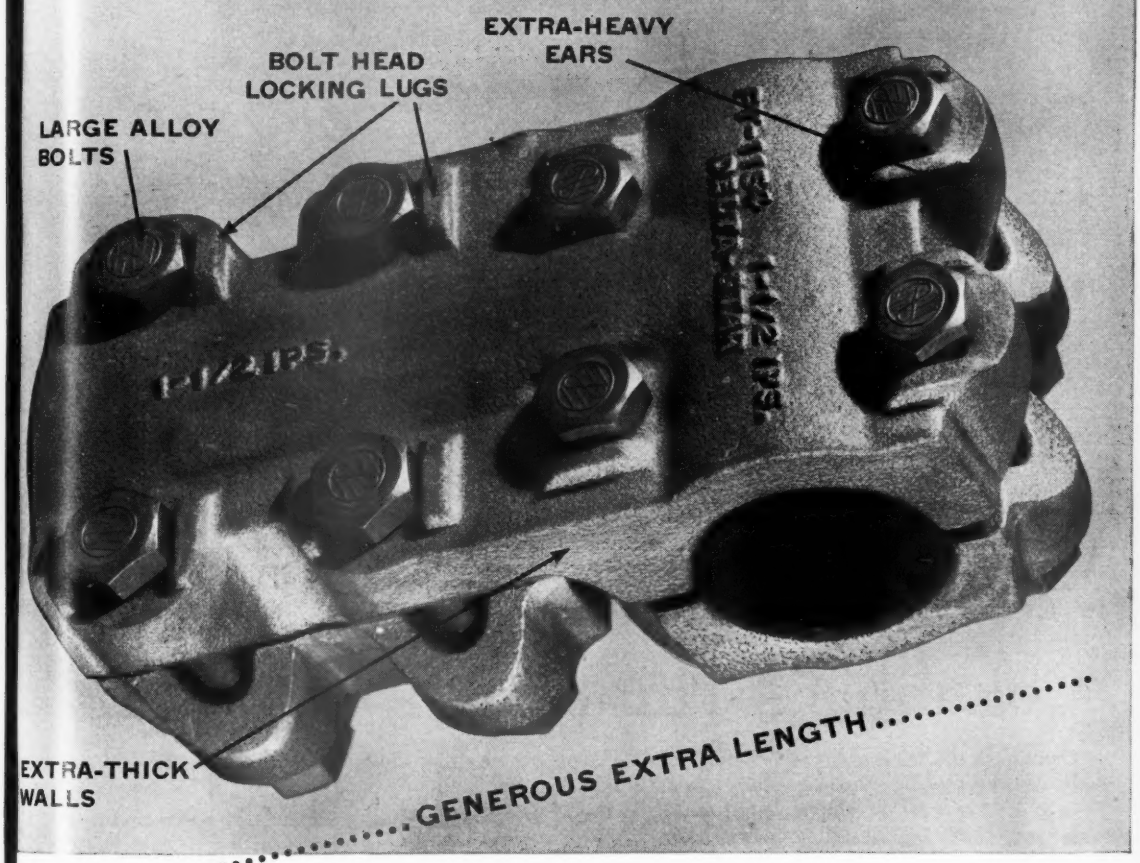

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New compressor stations, like the one pictured above, are constantly being built to m the steadily increasing demands for natural gas. These compressor stations pump natural through Columbia's 36,716 miles of pipeline to homes and industries in America's Heartl

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Customers in the area served by the Columbia Gas System keep calling for more and more natural gas —to meet a constantly increasing need for energy. To supply it, facilities with greater capacity must be constructed—new or enlarged compressing stations, pipe lines, metering stations and other equipment. So Columbia must think constructively!

During the past decade, the Columbia Gas System has spent more than a half billion dollars for construction. This year alone, Columbia expects to spend about $87 million on new facilities—to meet immediate and future natural gas requirements of more than three million families, businesses and industries in the dynamic and growing Heartland of American commerce and industry.

Where System companies serve within this seven-state Heartland—Pennsylvania, Ohio, West Virginia, Virginia, Kentucky, Maryland and southern New York—Columbia's residential sales have doubled, its househeating customers have increased almost three-fold in just ten years.

Growth in the Heartland shows no signs of diminishing . . . so to keep pace with the Heartland's growth, to provide the facilities and the service a growing number of customers require, Columbia thinks and plans constructively for the future.

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COLUMBUS GROUP: The Ohio Fuel Gas Company . . . **PITTSBURGH GROUP:** The Manufacturers Light and Heat Company, Columbia Gas of New York, Inc., Cumberland and Allegheny Gas Company, Home Gas Company

Industrial Progress

Consumers Power to Double Capacity of Karn Plant

NSUMERS Power Company an-nced recently that it will double capacity of its new Dan E. Karn m-electric power plant under con-uction on Saginaw Bay at the uth of the Saginaw river, bringing total to 500,000 kilowatts.

The company said work will begin nce on a second 250,000 kilowatt t scheduled for service in July 0. The first 250,000 kilowatt unit now under construction, with op-tion scheduled for July 1959.

The company's expansion program ixty-four lower peninsula counties require about $93,000,000 in 7, Mr. Karn said.

An 8th generating unit of 156,250 watts capacity is also under con-uction at the John C. Weadock nt on Saginaw Bay near the Karn . First operation is scheduled for ly 1958. The two Karn units, plus new Weadock unit, will mean a 35 cent increase in the power avail-e to the 1,486 Michigan cities, vil-es and townships supplied with tricity by Consumers.

hutte and Koerting Company ans Second Major Expansion In 6 Years

HUTTE and Koerting Company soon invest in the neighborhood a half million dollars in expanding nufacturing facilities at the com-y's plant in Cornwell's Heights, cks County, Pa. This is the second or extension of facilities within a year period.

n announcing this program, Mr. o W. Fischer, company president, ed that "rapid technological devel-ment, coupled with an amazing e of expansion within the power mical process, petroleum, food, other industries served by SK, had made necessary the creation of additional facilities in order to keep ahead of the requirements of regular customers and a growing list of new customers." The company will add over 25,000 square feet to the present plant.

Chamber Continues National Recognition Awards Program

BUSINESS firms of all types can become eligible to participate in a U.S. Chamber of Commerce sponsored program for explaining and interpreting the operation of business and our economic system. Utilities, the first line of defense in this effort by virtue of their strategic position, have qualified and have received awards under the program. It will be recalled that the Washington Water Power Company, Kinsey M. Robinson, president, was given a recent award at the Chamber's 45th Annual Meeting this past April. The program for 1957-'58 will be crowned by awards at the next annual meeting of the Chamber of Commerce of the United States in April, 1958.

National Recognition Awards are made annually to honor business firms making outstanding efforts: (1) to develop better understanding of American business among their employees; and (2) to encourage and help other business firms to make the same effort. Profits and productivity; government regulation and competition; how the system shares the rewards of successful enterprise—in these and other areas there is a chasm separating the truth from the average person's impressions and attitudes. Many firms are successfully bridging that gap, the Chamber notes, and it is for such outstanding effort that the

(*Continued on page* 30)

Common and Preferred Dividend Notice

July 31, 1957

The Board of Directors of the Company has declared the following quarterly dividends, all payable on September 1, 1957, to stockholders of record at close of business, August 13, 1957:

Security	*Amount per Share*
Preferred Stock, 5.50% First Preferred Series	$1.37½
Preferred Stock, 5.85% Series	$1.46¼
Preferred Stock, 5.00% Series	$1.25
Preferred Stock, 4.75% Convertible Series	$1.18¾
Preferred Stock, 4.50% Convertible Series	$1.12½
Preferred Stock, 5.75% Subordinate Convertible Series	$1.43¾
Common Stock	$0.35

Secretary

TEXAS EASTERN Transmission Corporation

SHREVEPORT, LOUISIANA

awards are made. Besides the Washington Water Power Company award, two other utilities received merit citations in 1956-'57. These were: Kentucky Utilities Company and Ohio Bell Telephone Company.

A booklet explaining the awards may be obtained from the Business Relations Department, Chamber of Commerce of the United States, 1614 "H" Street N.W., Washington 6, D. C. Ask for: National Recognition Awards Program booklet and other literature describing the program.

New Copes-Vulcan Bulletin

BULLETIN No. 1032, recently published by Copes-Vulcan Division, Blaw-Knox Company, Erie, Pa., describes the application of automatic control systems to large central station boilers.

Using as an example, the new Sutton Station of Carolina Power & Light Company, the bulletin explains the operation of the combustion, feedwater, feed-pump and soot-blowing control systems. A schematic diagram shows how the individual components are integrated into complete supervisory systems for greatest simplicity.

All controllers are of the modern plug-in type, and flow transmitters have friction-free transverters for pneumatic square-root conversion. Stations and controllers are designed for easy switching from automatic to manual or vice versa, and require a minimum run of tubing between controller and drive unit, valve or other device.

Con. Ed. of N. Y. Orders 340 MW Steam Turbine Generator Unit from A-C

CONSOLIDATED Edison Company of New York, Incorporated, has placed an order with Allis-Chalmers Mfg. Company for a 340 mw steam turbine generator unit for Astoria station. The new unit, Astoria No. 4, will be a 3600/1800 rpm, cross-compound unit with steam conditions of 2000 psig, 1050 F, 1000 F reheat and 2 inches Hg exhaust pressure.

The fully supercharged 20,000 volt generators will be designed to operate at 45 psig hydrogen pressure. At this pressure the generators will have a capability in excess of 375 mw. Generating capacity will be divi approximately equally between 3600 rpm and 1800 rpm shafts.

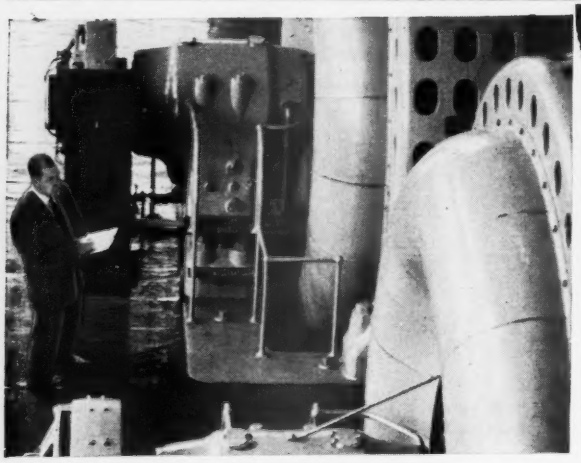
Excitation will be provided by s arate motor-driven exciters for e generator. The high-speed shaft have provision for boiler fe d pu drive.

3M Announces Price Reduct For "Scotchfil" Insulation Putty

A PRICE reduction of appr xima ly 30 per cent and improve elec cal and physical properties h ve b announced for "Scotchfil" lectr insulating putty by Minneso Min and Manufacturing Co., 900 B avenue, St. Paul, Minnesota.

The improved "Scotchfil"—a bla ⅛-inch thick tape in roll form, is signed to insulate and pad sh edges and fill voids on bus bars, ca splices and connectors—has a die tric strength 12½ per cent higher t the former product and a 25 per c improvement in tensile streng These improvements make for m mum distortion of the material dur

(*Continued on page* 31)



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- Large, inside ventilated, Rubber Goods Compartment.
- Two piece Front Window in crew compartment.
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DUSTRIAL PROGRESS—
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plication, improve its handling alities, and allow for more insulat- protection.

It is designed for use with "Scotch" nd plastic electrical tapes Nos. 22 d 33 and forms a moisture resistant d with the plastic tapes for greater ice protection.

The lower price has been made pos- le by increased production, the 3M d. "Scotchfil" is available through trical wholesalers. Application in- rmation and data are available from manufacture.

G-E Announces New Bulletin On Power Reactor Systems

HE General Electric Company's omic Power Equipment Depart- nt has announced a new bulletin, R-1384, reviewing reactor sys- ms to produce commercially useful ctricity from nuclear energy.

The bulletin, which presents a de- ed picture and word description of ious systems using water, gas, ium and liquid-fuel as coolants, ginally was presented by B. R. ntice, manager of the Nuclear Sys- ns Design Study of the Atomic wer Equipment Department, as a ture in January, 1957, at the Euro- n Atomic Energy Course for Man- ment in Paris, France.

Computer Symposium Scheduled for October

HE fourth annual Computer Ap- cations Symposium sponsored by mour Research Foundation of Illi- s Institute of Technology will be d October 24th and 25th at the tel Sherman, Chicago.

New computers and applications, l advances in automatic coding, l be stressed in invited papers, nel sessions, and discussions.

October 24th will be devoted to nsideration of business and man- ment applications, and the October th program to science and engineer- applications.

The two-day registration fee of $25 ludes luncheon on each day.

Information concerning the con- ence may be obtained by writing cretary, Computer Applications mposium, Armour Research Foun- tion, 10 W. 35th st., Chicago 16, nois.

U. S. Chamber Names Atomic Industry Committee

APPOINTMENT of Lewis M. ith, president, Alabama Power mpany, Birmingham, as chairman

(*Continued on page* 32)

in wire terminations

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of the Committee on Commercial Uses of Atomic Energy, Chamber of Commerce of the United States, has been announced by Chamber President Philip M. Talbott.

The Committee studies problems in the development of peacetime uses of atomic energy, and the means by which private industry can most contribute to this development. It recommends policy relating to legislative and regulatory improvements in the atomic energy field to the Chamber membership.

Mr. Smith's associates on the Committee for the year 1957-1958 will be:

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Gas Air Conditioning Manufacturers Given Suppo By Industry Committee

IMMEDIATE steps to support gas air conditioning programs of manufacturers in the field have b initiated by the American Gas A ciation's newly-organized Air Co tioning Promotion Committee.

Chairman W. W. Selzer, Colum Gas System Service Corp., N

(*Continued on page* 34)

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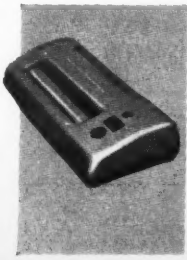

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Third Speed	2	2.8	4.3	5.8	7.8	10.6	13.3	17.9	22.8	47	86	146
High Speed (Ordinarily used when digging)	3.3	4.6	7.1	9.5	12.8	17.5	21.7	29.6	38	78	143	240
Reverse (not used when digging)	.4	.6	.9	1.2	1.6	2.2	2.7	3.7	4.8	9.9	18	30

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York, declared at the committee's meeting that gas air conditioning sents an enormous potential for industry and that "now is the t for immediate action on the par the utilities in selling gas air co tioning."

The committee's broad progra based on coordinating the stepped efforts of industry research com tees, equipment manufacturers, the promotion organizations of ut companies.

As one of its immediate goals, committee has decided to help leading manufacturer promote sale of an estimated 4600 gas air c ditioning units during the pre year. Other manufacturers will be sisted in tapping the huge air co tioning potential in the industr commercial, and residential marke

Northern Ill. Gas to Provid Year-Round Air Conditioni On Experimental Basis

NORTHERN Illinois Gas Comp has announced plans to provid maximum of 500 customers w year-round gas air conditioning s ice on an experimental basis. T program was petitioned for and cently approved in anticipation of ture additional supplies of natural

Opportunity to take advantage the gas company's experimental p will be initially offered customers the utility's space heat waiting list a first-come, first-served basis, cording to H. A. Diekmann, vice pr dent in charge of sales. Letters plaining the program are being mai to customers starting with those hi est on the waiting list.

Mr. Diekmann emphasized that intent of this program was for gas company to gain broad knowle and experience in the field with spect to maintenance, service over-all general performance of year-round home conditioning un

He pointed out that when additi al large supplies of natural gas available—basically for sale to spa heating customers—the company have an excess of natural gas in summer months. Northern Illinois must find outlets, such as offered air conditioning, to use up this ant pated excess during the warm months in order to maintain the pr ent relatively even winter-summ consumption if the utility is to ma tain the lowest average cost of n ural gas service to its customers.

(Continued on page 36)

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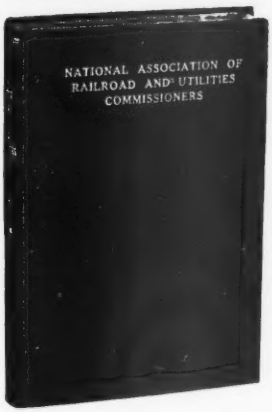

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Actual road tests prove Dodge outpulls "other two" low-priced trucks by 32%

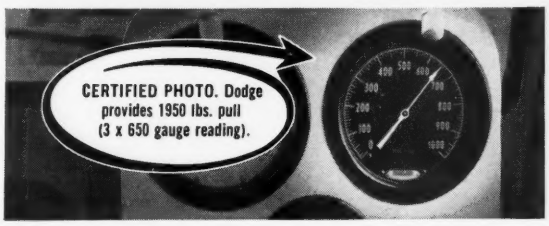
Dodge gives you *Extra Pull* . . . cuts running time and maintenance costs

Here is definite proof that Dodge gives you a big power advantage that will pay off on your hauling jobs.

All three low-priced trucks were recently compared side by side in a grueling series of performance tests. The dynamometer test shown here is only one of them. And in each test . . . *climbing power* . . . *passing power* . . . *pulling power* . . . Dodge proved the outstanding truck of the low-priced three.

Extra power does it. From 204- to 232-hp. V-8's, Dodge *Power Giants* deliver the extra power you need to handle your hauling jobs faster, with less engine strain. Naturally, less strain means less wear, fewer repairs as you pile on the miles.

See proof for yourself. Certified results of all the comparison tests are in your Dodge dealer's showroom. Look them over and we think you'll be convinced that your next truck should be a Dodge.



DODGE and competitive trucks were tested for pulling power by towing a special dynamometer truck. Gauges measure maximum pulling force exerted. To convert this force into pounds, gauge reading is multiplied by three.

TRUCK C, pulling the same dynamometer truck as the Dodge, was unable to equal the Power Giant mark in repeated tries. Gauges show Dodge outpulled Truck C by 32%.

TRUCK F in its turn pitted all its pulling power against the Dodge, to no avail. The sealed, accurate gauges reveal clearly that Dodge offers most "pull power" of the low-priced 3.

DODGE

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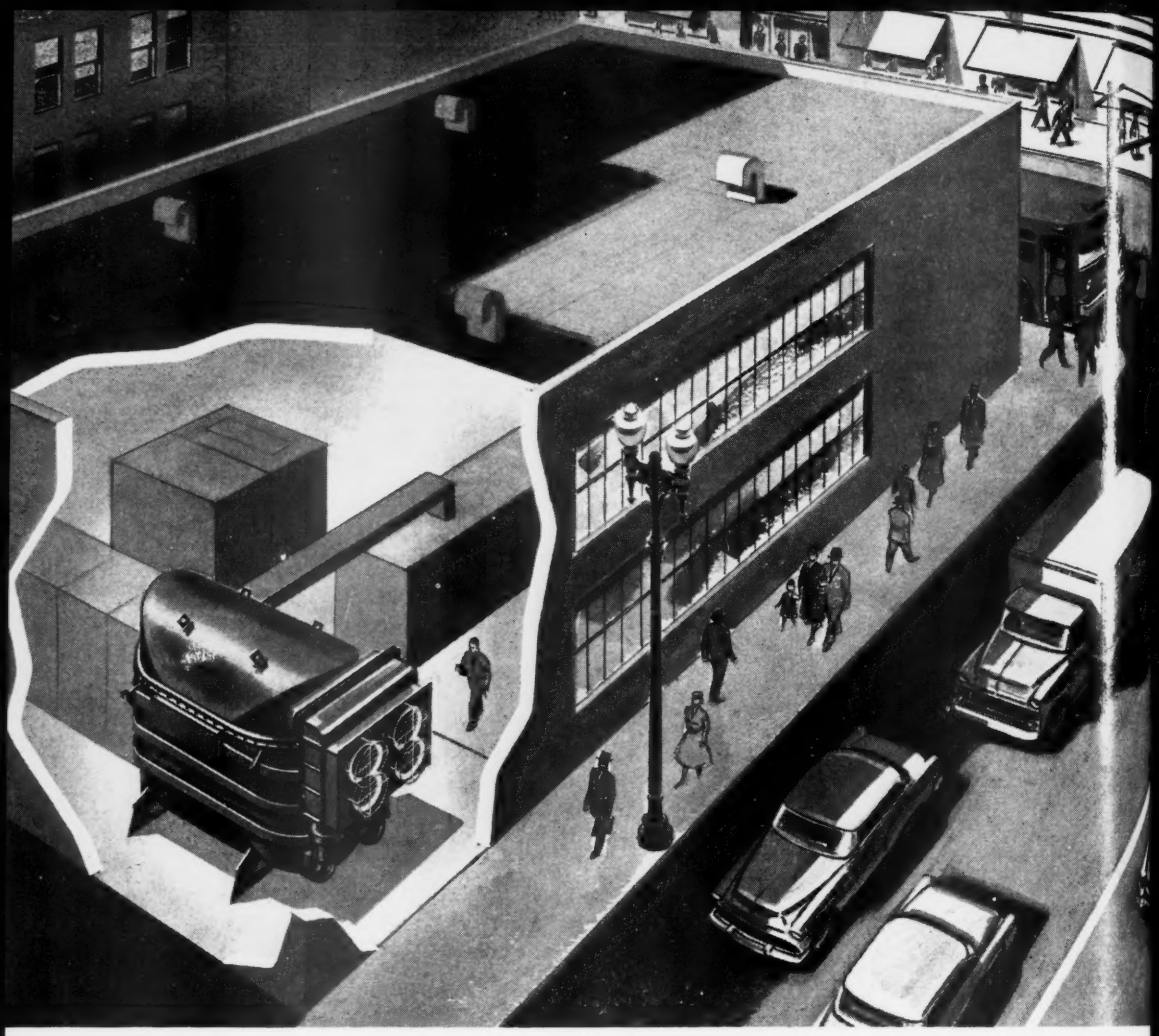
MOST POWER OF THE LOW-PRICED 3



DOWNTOWN SUBSTATION, where dense population demands greater safety, is one of several transformer applications in which the advantages of non-flammable, gas-filled units offer utilities large economies by eliminating costly vaults and fire-extinguishing equipment.

What does the future hold for gas-filled transformers?

Increasing number of urban and residential substations points up safety advantages of gas insulation.

The growing concentration of load in heavily populated areas has required the location of more and larger transformers in substations in downtown and residential areas and adjacent to commercial buildings and factories. In each of these applications, safe transformer operation is becoming increasingly important.

Engineers at General Electric's Power Transformer Department, Pittsfield, Mass., predict gas-filled transformers will eventually replace oil-filled units for such applications, because gas-filled transformers—insulated and cooled with sulphur hexafluoride under pressure—greatly reduce possible fire hazards. Economies for electric utilities can total millions of dollars through the elimination of expensive vaults and fire-extinguishing equipment required for oil-filled units.

Two 69-kv, 2000-kva gas-filled transformers, believed to be the world's first, were shipped last year by General Electric. Preliminary design work on a third unit, rated 69 kv, 10,000 kva, has recently been completed. Field test information on these units, coupled with an intensive program of engineering development and design work, will enable General Electric to help accomplish the predicted bright future for gas-filled transformers.

There are several other advantages of gas-filled transformers compared with oil-filled units. They are 20 to 30 percent lighter for the same rating and operate at reduced sound levels. For more information on gas-filled transformers, contact your General Electric Apparatus Sales Office. General Electric Co., Sect., 301-363, Schenectady 5, New York.

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